PEM ENVIRONMENTAL

PEM Environmental
ABN 65 112 916 859
20 Warwick Close Blaxland 2774
Phone: 0416 235034
Email: pmoore1506@iinet.net.au

P202313 495 Fourth Ave Austral.docx

20 October 2023

Mr Victor Kirpichnikov
Geotesta Pty Ltd
Unit 6 20-22 Foundry Road
Seven Hills NSW 2147
Via email: vk@geotesta.com.au

Dear Victor

Re: Review of Contamination Status 495 Fourth Ave Austral NSW 2179

As requested, as a Certified Environmental Practitioner in Site Contamination (CEnvP-SC), I have reviewed a document entitled 'Preliminary Site Investigation for 495 Fourth Ave Austral NSW 2179' – Project Reference NE996, Rev 4 prepared for Fabcot Pty Limited (Fabcot) dated 20 October 2023. The objective of the investigation was to provide an assessment of the potential ground contamination status of the above property, proposed for a commercial development. The investigation was based on information obtained from an initial desktop study, historical photography reviews and a site inspection followed by soil sampling and testing the site area. The results of the investigations were then presented in this report. My objective was to review and provide final certification for this report.

In 2022 as a CEnvP - SC, I reviewed the following documents:

1. 'Addendum Letter - Data Gap Contamination Assessment for 495 Fourth Ave Austral NSW 2179' – Project Reference NE996, prepared for Bathla Group dated 26 October 2022.
2. 'Preliminary Site Investigation, 495 Fourth Ave Austral NSW 2179 - Document No. NE996, Rev 3 prepared for Bathla Group dated 1 September 2022.

The assessments were undertaken to establish whether the land was suitable for low density residential development from a contamination perspective. Both assessments were signed off as suitable for low residential development. These reports can be found in Appendix G of the above Rev 4 and should be read in conjunction with the current revision. Information has also been provided by way of updated aerial photographs in Rev 4 (September 2023) that the condition of the land is similar to that found during the previous investigations undertaken in 2021 and 2022 and reported above.

It is my understanding that the site has now been sold to Fabcot and is now proposed to be developed for commercial land use.

Upon my review of the Preliminary Site Investigation (Rev4) Report, I am satisfied with the report and conclusions and that it was prepared in accordance with the requirements of the relevant standards, legislation and guidelines, namely:

- NSW Contaminated Land Management Act (1997)
- State Environmental Planning Policy Resilience and Hazards (Chapter 4)
- NSW EPA Contaminated Land Guideline - Consultants Reporting on Contaminated Land (2020); and,
- National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) (NEPM 2013).

I concur with the findings of the investigation that the site is suitable for commercial development subject to an unexpected finds protocol when civil works occur due to the presence of extensive vegetation during previous investigations. Should you have any further queries, please contact me on (0416) 235034.

Yours sincerely,

Peter Moore
Principal Engineer CEnvP - SC
PEM Environmental

PRELIMINARY SITE INVESTIGATION REPORT

PROJECT:	**495 Fourth Avenue, Austral NSW 2179**
CLIENT:	**Fabcot Pty Limited**
DATE:	**20 October 2023**
REPORT No.:	**NE996**

GEOTESTA

GEOTESTA PTY LTD ABN 91 851 620 815
Unit 6/20-22 Foundry Road, Seven Hills, NSW 2147
1300 852 216 info@geotesta.com.au geotesta.com.au

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EXECUTIVE SUMMARY

Geotesta was originally engaged by The Bathla Group in October 2021 to conduct a Preliminary Site Investigation (PSI) ("*Preliminary Site Investigation (PSI) Report for 495 Fourth Avenue, Austral NSW 2179, Report# NE996, Rev (3), 1 September 2022"*, refer to Appendix G*),* on the site referred to as 495 Fourth Avenue, Austral NSW 2179.

An additional Data Gap Contamination Assessment ("*Addendum Letter – Data Gap Contamination Assessment, 495 Fourth Avenue, Austral NSW 2179, Letter#NE996_ Addendum Letter_ 26October2022, 26 October 2022*", refer to Appendix H) was conducted on the 29 August 2022 in relation to potential asbestos contamination within the footprint of the former dwelling within the site.

The current PSI Report Rev (4) combines both assessments into a single report and further addresses that the previously assessed property has since transferred in ownership to Fabcot Pty Limited.

A review of the most recent 'Nearmaps' aerial photograph (dated 7 September 2023), indicates that the site condition remains largely unchanged since the Data Gap Contamination Assessment (dated 29 August 2022).

The PSI was conducted in general accordance with *"Managing Land Contamination Planning Guidelines SEPP 55"* and this report compiled, taking into consideration the *NSW EPA Consultants reporting on Contaminated Land Guidelines update May 2020*. The PSI contains an appraisal of the site's history and a report based on a visual site inspection and assessment. All relevant information about the site was assessed to determine the potential for site contamination. To support the outcomes of the PSI a limited sampling and analysis program was implemented.

This report is based only on the information provided at the time of this report preparation and may not be valid if changes are made to the site conditions and/or soil and groundwater.

The objectives of this PSI are to:

- assess the past uses of the site and the potential environmental impacts that they may have had on the environmental condition of the site;
- conduct a limited soil sampling and analysis program to assess the current environmental condition;
- identify potential environmental risks associated with the site;
- address the requirements of the planning authority.

The scope of works was developed with referral to the following documents and guidelines:

- Australian Standard AS 4482.1 (2005) *Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Non volatile and semi-volatile compounds;*
- Australian Standard AS 4482.2-1999 *Guide to the sampling and investigation of potentially contaminated soil Part 2: Volatile substances;*
- National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 No1;
- Department of Environment and Conservation NSW: *Guidelines for Assessing Former Market Gardens (2005);* and
- other relevant NSW guidelines and legislation, including the *NSW EPA Sampling Guidelines (1995).*

The scope of works included the following:

- A site inspection;
- historical aerial photographs;
- public record search, such as Council, OEH, EPA etc;
- geological and hydrogeological review;
- conduct a limited soil sampling and analysis program; and
- production of this report on the contamination status of the site.

Activities undertaken to achieve the above objectives are reported and discussed in the following sections.

Based on the historical review, background review and site inspection, the site was used for agricultural activities from as early as 1947. Small dwelling / structure was situated on the southern boundary, until it was demolished 1978 – 1984 (latest). The site since 1985 has been primarily used as a market garden until 2005. From 2009 to the present date, the site appeared to be vacant land, as was observed during site inspection.

A summary of the laboratory results is presented as the following:

- All detected concentrations of heavy metals were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC) – Health Investigation Levels (HIL D).

- All detected concentrations of OCP/OPP were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (HIL D).
- No Asbestos was detected at the Reporting Limit of 0.01% w/w in the samples analysed and were therefore within the Site Assessment Criteria (SAC). Eurofins reported that insufficient sample was received for the identification of Asbestos in soil, as per *NEPM & WA Guidelines* - 0.001% w/w.

Based on the assessment undertaken, the following conclusions and recommendations can be made:

- All the contaminant concentrations of interest that were analysed were found to be within the site assessment criteria (SAC).
- The conducted Preliminary Site Investigation's limited soil sampling and analysis program indicated a **low** risk of soil and groundwater contamination. It is the opinion of Geotesta Pty Ltd that the site is suitable for the proposed Commercial Development.
- Due to extensive grass / vegetation cover during the site investigations, visual inspections for contamination could not be conducted effectively, Geotesta recommends the requirement for an Unexpected Finds Protocol (UFP) when the site is cleared.

1. INTRODUCTION

Geotesta was originally engaged by The Bathla Group in October 2021 to conduct a Preliminary Site Investigation (PSI) ("*Preliminary Site Investigation (PSI) Report for 495 Fourth Avenue, Austral NSW 2179, Report# NE996, Rev (3), 1 September 2022"*, refer to Appendix G*)*, on the site referred to as 495 Fourth Avenue, Austral NSW 2179.

An additional Data Gap Contamination Assessment *("Addendum Letter – Data Gap Contamination Assessment, 495 Fourth Avenue, Austral NSW 2179, Letter#NE996_AddendumLetter_ 26October 2022, 26 October 2022"*, refer to Appendix H*)* was conducted on the 29 August 2022 in relation to potential asbestos contamination within the footprint of the former dwelling within the site.

The current PSI Report Rev (4) combines both assessments into a single report and further addresses that the previously assessed property has since transferred in ownership to Fabcot Pty Limited.

The PSI contains an appraisal of the site's history and a report based on a visual site inspection and assessment. Based on the site's history, the PSI was conducted in accordance with the Department of Environment and Conservation (NSW) contaminated sites guideline: *"Guidelines for Assessing Former Market Gardens (2005)".* All relevant information about the site was assessed to determine the potential for site contamination. To support the outcomes of the PSI's limited sampling and analysis program was implemented.

This report is based only on the information provided at the time of this report preparation and may not be valid if changes are made to the site conditions and/or soil and groundwater.

2. PLANNING GUIDELINES

The land is to be developed for commercial use. The planning authority must consider the possibility that the previous land use has the potential to cause contamination of the site as well as the potential risk to health or the environment from that contamination. The PSI encompasses a limited sampling regime to determine if there is a potential for land contamination that has a potential to impact the development application (DA).

The Guidelines recommend that re-zonings, development control plans and development applications (DAs) are backed up by information demonstrating that the land is suitable for the proposed use or can be made suitable, either by remediation or by the way the land is used.

3. OBJECTIVES

The objectives of this PSI are to:

- assess the past uses of the site and the potential environmental impacts that they may have had on the environmental condition of the site;
- conduct a limited soil sampling and analysis program to assess the current environmental condition;
- identify potential environmental risks associated with the site;
- assess the type, extent, and level of potential contamination
- address the requirements of the planning authority.

4. SCOPE OF WORKS

The following scope of works was implemented to achieve the objectives of the PSI.

The PSI was conducted in general accordance with the Australian Standard AS 4482.1 (2005) *Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Non-volatile and semi-volatile compounds*, the Australian Standard AS 4482.2-1999 *Guide to the sampling and investigation of potentially contaminated soil Part 2: Volatile substances*, the National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 No1, and other relevant NSW guidelines and legislation, including the *NSW EPA Sampling Guidelines (1995).*

The scope of works included the following:

- A site inspection;
- historical aerial photographs;
- public record search, such as Council, OEH, EPA etc;
- geological and hydrogeological review;
- conduct a limited soil sampling and analysis program; and
- production of this report on the contamination status of the site.

Activities undertaken to achieve the above objectives are reported and discussed in the following sections.

5. SITE DESCRIPTION

5.1 Site Identification

The site under investigation is situated at 495 Fourth Avenue, Austral NSW 2179 on the northeastern end of Fourth Avenue and is approximately 50 km (by road) west of Sydney CBD. The site is rectangle in shape, with an area of approximately 1.2 ha. The site is located within Liverpool City Council.

A review of the most recent 'Nearmaps' aerial photograph (dated 7 September 2023), indicates that the site condition remains largely unchanged since the Data Gap Contamination Assessment (dated 29 August 2022). Site overview and the location of the former dwelling is provided in Figure 1.

The site identification detail is presented in Table 1.

Table 1: Site Identification

Site Details	Site Observations
Address	495 Fourth Avenue, Austral NSW 2179
Lot/Section/Plan no:	Lot. 121 DP1220414
Local Government Area	Liverpool City Council
Site Area (Approx)	~ 1.2 ha
Zoning	B1: Neighbourhood Centre
Current Land Use	Vacant Land

Figure 1. Site Location and features, (Nearmaps, dated 7 September 2023)

5.2 Proposed Development

The proposed development of the site is for a Woolworths Shopping Centre. The site lies within a B1 Neighbourhood Centre zone. Similar neighbourhood centre zones are to the east of the site. Public Recreation zones are directly south to the site. The site is surrounded by rural residential properties, with a School located to the north.

5.3 Site Details, Location and Topography

At the time of site investigation, the subject site was vacant land, with overgrown dense grass. The site exhibits a relatively distinct downward slope to the north of approximately 5-10 degree.

Regional topographic maps indicate that the site is approximately 84m above sea level, referenced to Australian Height Datum (AHD).

5.4 Geological, Soil Landscapes and Drainage

The Penrith 1:100,000 Geological Sheet indicates that the site is situated on the boundary of the Bringelly Shale of the Wianamatta Group consisting of shale, carbonaceous claystone, claystone, laminite, fine to medium-grained lithic sandstone, rare coal and tuff (Rwb).

The Penrith 1:100,000 Soil Landscape Series Sheet (1989) indicates site soils comprise on the boundary of the Blacktown soil landscape soil landscapes. The Blacktown soil landscape consists of shallow to moderately deep (>1 m) hard setting mottled texture contrast soils, red and brown podzolic soils on crests grading to yellow podzolic soils on lower slopes and in drainage lines.
The nearest environmental receptor is Kemps Creek which is located approximately 1.2 km to the west. The surface flow is to the north and any runoff could eventually flow to Kemps Creek.

5.5 Site Regional Meteorology

The following climate information from the Commonwealth Bureau of Meteorology website (http://www.bom.gov.au/) can be obtained:

- Mean maximum temperature of 24.0°C from January to December at Badgerys Creek NSW, approximately 8.0 km away from the site.
- Mean minimum temperature of 10.9°C from January to December at Badgerys Creek NSW, approximately 8.0 km away from the site.
- Mean annual rainfall of 639.0 mm from January to December at Badgerys Creek, NSW approximately 8.0 km away from the site.

5.6 Hydrogeology

Groundwater in the area occurs as an unconfined aquifer in fractures and joints of the shale (fracture rock aquifer). The 1:2 000 000 Department of Water Resources Groundwater in NSW, Assessment of Pollution Risk map indicates that the site is likely to be underlain by shales and that the potential for groundwater movement is likely to be low.

A search of Department Primary Industries - Office of Water records identified one groundwater well located within an approximate distance of 750 metres from the site, shown in Table 2.

Table 2: Groundwater Wells

Bore ID:	Bore Depth(m)	Latitude	Longitude
GW100571.1.1	271	-33.914377	150.81645

5.7 Acid Sulphate Soils

The Department for Infrastructure, Planning and Natural Resources (DIPNR) Acid Sulphate Soils Risk Mapping (1997) indicates that the Site is not expected to be underlain by acid sulphate soils.

5.8 Site History

5.8.1 Site Inspection

The aerial historical photographs and site walkover conducted 14 October 2021, indicated that the area of investigation has mainly been used for agricultural purposes /market garden since 1947. Aerial photography indicates adjacent south of the site has been used as residential / agricultural usage since 1947. Aerial photography indicates the site was also used for residential purposes, with a dwelling located along the southern boundary from 1947 until 1978 (latest 1984).

The site was covered with overgrown dry, dense grass. During site investigation it was determined that the site can be classified as vacant land. No stockpiles, storage sheds or vehicles were observed. The surrounding areas appear to have or are vacant land directly east of the site, as well as low-density residential and agricultural purposes. No signs of contamination, odours or “vegetation die-back” were observed at the time of the inspection.

Photographic log is provided in Appendix E.

5.8.2 Aerial Photograph Review

An aerial photograph search was conducted on the site and the local area. The aerial photos were viewed with observations presented in Table 3. Aerial photographs are provided in Appendix B.

Table 3: Aerial Photograph Review

Year	Site Observations	Surrounding Area
1947	• Black and white photograph (poor quality) • Suspected structure located on the southern boundary • Suspected agricultural usage • Remaining site - vacant exposed ground surfaces	• Black and white photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Suspected agricultural residential located to the south
1965	• Black and white photograph • Dwelling located on the southern boundary • Suspected agricultural usage • Remaining site - vacant exposed ground surfaces Multiple trees located in north-western and western boundary	• Black and white photograph • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east and south
1975	• Black and white photograph • Dwelling located on the southern boundary • Suspected agricultural usage • Multiple trees located in north-western and western boundary Agricultural usage established	• Black and white photograph • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east and south; • Dwelling appears to have been demolished adjacent south
1978	• No change from previous photograph.	• No change from the previous photograph.
1984	• Black and white photograph (poor quality) • Black and white photograph • Dwelling located on the southern boundary had since been demolished • Suspected agricultural usage • Multiple trees located in north-western and western boundary	• Black and white photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Suspected agricultural residential located to the east and south; • Structure appears to have been demolished adjacent south
1986	• Colour photograph • Multiple trees located in north-western and western boundary • Agricultural usage	• Colour photograph • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east and south;
1991	• No change from previous photograph.	• No change from previous photograph.
1998	• Colour photograph • Multiple trees located in north-western and western boundary	• Colour photograph • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north

	• Signs of recent earthworks / land clearing for agricultural usage	• Signs of recent earthworks / land clearing for agricultural usage, adjacent south and east • Agricultural residential located to the east and south;
2000	• Colour photograph • Multiple trees located in north-western and western boundary • Agricultural usage	• Colour photograph • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east, north and south;
2004	• Colour photograph (poor quality) • Multiple trees located in north-western and western boundary • Agricultural usage	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east, north and south;
2005	• Colour photograph • Multiple trees located in north-western and western boundary • Agricultural usage	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east, north and south;
2007	• Colour photograph • Multiple trees located in north-western and western boundary • Vacant ground grassed exposed surfaces	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east, north and south; • Increase in residential development
2009	• No change from previous photograph	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east, north and south; • Increase in residential development
2011	• No change from previous photograph	• No change from previous photograph
2014	• No change from previous photograph.	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Construction earthworks located adjacent north • Agricultural residential located to the east, north and south; • Increase in residential development
2015	• No change from previous photograph.	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • School premises located adjacent north • Agricultural residential located to the east, north and south; • Increase in residential development
2016	• No change from previous photograph.	• No change from previous photograph.

2018	• No change from previous photograph.	• No change from previous photograph
2019	• No change from previous photograph.	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • School premises located adjacent north • Agricultural residential located to the east, north and south; • Residential development located to the east
2020	• No change from previous photograph.	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • School premises located adjacent north • Agricultural residential located to the east, north and south; • Ongoing residential development located to the east
2021	• No change to previous photograph	• No change to previous photograph

5.8.3 NSW OEH Records

The site or nearby surrounding areas within 1 km, have no notices under the Contaminated Land Management Act (1997) or the Environmentally Hazardous Chemicals Act (1985). No sites were identified in the Sites List of NSW Contaminated Notified to the EPA as of 29 August 2022.

5.9 Summary of Site History

Based on the historical review, background review and site inspection, the site was used for agricultural activities from as early as 1947. Small dwelling / structure was situated on the southern boundary, until it was demolished 1978 – 1984 (latest). The site since 1985 has been primarily used as a market garden until 2005. From 2009 to the present date, the site appeared to be vacant land, as was observed during site inspection.

5.10 Planning Certificate

Planning Certificate Under Section 10.7 (Certificate No: 537) for the site was sourced from Liverpool City Council on 28 July 2021. The certificate is presented in Appendix C. The Planning Certificate, which is applicable to Lot 12 DP 1103748, indicates that there are no matters arising under Section 59(2) of the Contaminated Land Management Act 1997 (Act), as follows:

- The land is NOT significantly contaminated land (or part of the land) within the meaning of the Act at the date when the certificates were issued.
- The land is NOT the subject to a management order within the meaning of the Act at the date when the certificates were issued.

- The land is NOT the subject of an approval voluntary management proposal within the meaning of the Act at the date when the certificates were issued.
- The land is NOT the subject of an ongoing maintenance order within the meaning of the Act at the date when the certificates were issued.
- The land is NOT the subject of a site audit statement within the meaning of the Act at the date when the certificates were issued.

5.11 Historical Land Titles Search

A search for the Historical Land Titles was not conducted as a review of the site aerial photographs, in conjunction with an interview with the current owner, indicates the site has not been used for anything other than vacant land, market garden, and possible residential living purposes.

6. CONCEPTUAL SITE MODEL

6.1 Areas of Environmental Concern

Our assessment of site AECs and COPCs (Table 4) is made based on available site history, aerial photograph interpretation and site walkovers.

Table 4: Areas of Environmental Concern and Contaminants of Primary Concern (COPC)

AEC	Potential for Contamination	COPC	Contamination Likelihood
A – Areas of previous Market Garden usage	Pesticides and heavy metals may have been used during development of market gardens.	HM and OCP/OPP	Medium - High
B – Area of former Dwelling/Shed	Heavy metals may have been used underneath dwellings. Sheds or areas surrounding sheds may have been used as fuel storage, oil or drums of unknown content; asbestos sheeting, may include lead-based paints.	HM, OCP/OPP, and Asbestos	Medium-High

6.2 Potential Receptors and Sensitive Environments

The residents and visitors/workers on site are identified as immediately sensitive environmental receptors. A summary of the identified potential receptors and sensitive environments is detailed below in Table 5.

Table 5: Potential Receptors and Sensitive Environments

Receptors/Environments	Potential Pathway
Human Receptors: • Future site workers and visitors • Site labourers/workers • Residents of adjacent properties • Trespassers	• Direct skin contact • Ingestion of contaminated soil
Sensitive Environments: • Kemps Creek Tributaries	• Migration via stormwater run-off or within groundwater • Migration into underlying soil

Given the heavily modified nature of the site and surrounding land, flora and fauna receptors are not considered to be sensitive.

Given the lack of extractive bores in the area and expected deep clays over shale, groundwater is not considered a significant receptor.

6.3 Potential for Migration and Exposure of Contamination

Site history information and onsite inspection observations indicated a potential for contaminants to present a direct contact and inhalation exposure risk on site. Exposure routes of contaminants could potentially be through direct contact with exposed soils (Heavy Metals, OCP/OPP and Asbestos). These exposure risks are "likely" to pose high risks to receptors and environments during any demolition, earthworks, or construction phases within the site.

There is a potential for these contaminates to be present within underlying soils with the ability for such contaminates to migrate horizontally through stormwater runoff pathways from the proposed development.

6.4 Assessment of Preliminary Site Investigation and Recommendations

Based on the historical review, background review and site inspection, the site was used for agricultural activities from as early as 1947. Small dwelling / structure was situated on the southern boundary, until it was demolished 1978 – 1984 (latest). The site since 1985 has been primarily used as a market garden until 2005. From 2009 to the present date, the site appeared to be vacant land, as was observed during site inspection. The site and the footprint of the former dwelling onsite is illustrated in Figure 1.

Based on the site's history and walkthrough, the site is considered to have the following environmental concerns of:

- Areas of possible cropping/farming activity may have introduced heavy metals and pesticides into the soil.
- Area of a previous dwelling/shed, may have introduced hazardous building materials and other contamination, such as OCP/OPP, lead based paints and asbestos.

To address identified AECs, intrusive soil/water sampling regime is recommended to determine what, if any, remediation is required to render the site fit for commercial use. A limited soil sampling plan is to be developed based on a judgemental or systematic sampling pattern and risk-based assessment.

Assessment shall address each of the identified AECs and assess COPC identified for each AEC (Table 4). Results of the site testing shall be assessed against Site Acceptance Criteria (SAC) with reference to *ASC NEPM (1999, amended 2013).*

7. SAMPLING AND ANALYSIS QUALITY PLAN (SAQP)

The SAQP followed the seven step Data Quality Objective (DQO) process. The Data Quality Objective (DQO) process was applied to the investigation to ensure that all data collection activities were appropriate and achieved the project objectives. The DQO process consists of seven (7) steps, outlined below, which define the type, quality, and quantity of data needed to support decisions relating to the environmental condition of a site.

7.1 Step 1: State the Problem

The 'problem' as it stands, is that an intrusive investigation is required to address the data gaps and to assess the condition of AECs. The purpose of this investigation is to determine the suitability of the site based on the field and analytical data collected.

7.2 Step 2: Identify the Decision

Based on the objectives outlined in **Section 3**, it will be necessary to consider the following questions:

- Has the nature, extent and source of soil impacts been defined?
- Where contaminants are present, do the concentrations have the potential to adversely impact on human health or the environment?
- Does the collected data provide sufficient information to allow the selection and design of an appropriate remedial strategy, if necessary?

7.3 Step 3: Identify Inputs to the Decision

Key data required for the decision-making process includes:

- Qualitative site information presented in the site overview;
- National and State guidelines endorsed under the *NSW Contaminated Land Management Act 1997*;
- Visual assessment of the site and material condition;
- Intrusive investigation;
- Identification of potential receptors, both on and off site;
- The assessment of exposure pathways including conceptual fate and transport modelling of potential contaminants;
- Laboratory analysis of potential soil contaminants including:

- Heavy Metals (Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc),
- Organochlorine Pesticides (OCP),
- Organophosphorus Pesticides (OPP), and
- Asbestos

- Comparison of the results of the laboratory analysis to the applicable guidelines to evaluate the suitability of the site for the proposed use.

7.4 Step 4: Define the Study Boundaries

The boundaries of the study area are within the allotment cadastral site boundaries (refer to **Figure 1**). The vertical extent of the assessment is limited to surface soils to a maximum depth of 0.2 m bgl where natural soils were encountered. The study is temporally limited to the days of the sampling, that is 14 October 2021 and the 29 August 2022.

7.5 Step 5: Develop a Decision Rule

The assessment includes a comparison of individual sample results to the generic and site-specific criteria detailed within *Schedule B (1) Guideline on Investigation Levels for Soil and Groundwater* of the *National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPM) (Amended 2013),* published by the National Environment Protection Council (NEPC). The assessment criteria are outlined and justified in Section 10.

The decision rules can be defined as: -

- If the laboratory quality assurance/ quality control data are within the acceptable ranges, the data will be considered suitable for use;
- If the COPCs are reported above the adopted criteria and/or at elevated levels (where no criteria are available) then it will be considered whether further assessment, remediation and/or management measures are required; and
- Where concentrations are below the assessment criteria, then no further assessment, remediation and/or management of that contaminant, in that area, in that media, is required. This is provided samples have been collected at the required frequencies (as per NSW EPA guidelines) and adequately represent the conditions on site, if not, additional sampling may be required.

7.6 Step 6: Specify Limits on Decision Errors

Two types of decision errors may occur due to uncertainties or limitations in the project data set:

- A site is deemed uncontaminated when, in fact, it is contaminated; and
- A site is deemed contaminated when, in fact, it is uncontaminated.

The consequences for incorrectly assessing a site as posing an unacceptable risk are considered less significant than the consequences for incorrectly assessing a site as posing acceptable risk.

Factors that may contribute to one of the above decision errors include:

- Sampling error – the sampling program does not adequately detect the variability of a contaminant from point to point across the site. That is, the samples collected are not representative of the site conditions; and
- Measurement error – may occur through the sample collection, handling, preparation, analysis, and data reduction processes.

The combination of the above errors is known as 'total study error' and is minimised through the correct choice of sampling design and measurement systems.

Geotesta will mitigate the risk of decision error by:

- Assignment of fieldwork tasks to suitably trained consulting staff, and experienced contractors;
- Assignment of laboratory analytical tasks to reputable NATA accredited laboratories; and
- Assignment of data interpretation tasks to suitably trained Geotesta consulting staff, and outsourcing to technical experts where required.

A range of data quality indicators (DQI) have been adopted to facilitate the assessment of the completeness, comparability, representativeness, precision and accuracy, shown in Table 6.

Table 6. Data Quality Indicators (DQI)

DQI	Consideration		Compliance
Completeness[1]	Field	All critical locations sampled	A total of twenty (20) primary soil samples were collected via auger drilling from twenty (20) locations within the site. A total of four (4) primary soil samples were collected via test pitting from four (4) locations within footprint of the former dwelling.
		All samples collected (from grid and at depth)	All samples were collected in accordance with the limited sampling plan
		SOPs appropriate and complied with	All samples were collected in accordance with relevant guidelines, industry practices, and Australian Standards
		Experienced sampler	Samples were recovered by a suitably qualified and experienced sampler
		Documentation correct	All required documentation was completed including written site records and photographic logs
	Laboratory	All critical samples analysed according to SAQP	All of the recovered samples were analysed by a NATA accredited laboratory
		All analytes analysed according to SAQP	Each recovered sample was analysed for the analytes required by the SAQP in accordance with the context for which the sample was recovered
		Appropriate methods and LORs	Eurofins is a suitably qualified NATA accredited laboratory, therefore the appropriate methods and LORs were adopted for the testing, as outlined within the analytical reports
		Sample documentation complete	Appropriate chain of custody documentation was completed. A sample receipt was provided detailing the condition of the samples upon receipt
		Sample holding times complied with	All samples were analysed within the appropriate holding times as detailed in *NEPM 2013*
Comparability[2]	Field	Same SOPs used on each occasion	Each sample was recovered in accordance with the SOPs
		Experienced sampler	Samples were recovered by two suitably qualified and experienced samplers
		Climatic conditions	Samples stored in insulated containers with ice bricks. Climatic conditions were ideal on the day of sampling

DQI	Consideration		Compliance
		Same types of samples collected	The type of samples collected was consistent
	Laboratory	Sample analytical methods used	Eurofins is a suitably qualified NATA accredited laboratory, therefore the appropriate methods were adopted for the testing, as outlined within the analytical reports
		Sample LORs	Eurofins is a suitably qualified NATA accredited laboratory, therefore the appropriate LORs were adopted for the testing, as outlined within the analytical reports
		Same laboratories	Eurofins conducted all of the analytical testing of primary samples
		Same units	The same units were used for the respective analytes
Representativeness3	Field	Appropriate media sampled according to SAQP	All samples were recovered in accordance with the SAQP
		All media identified in SAQP	The investigation was limited to the analysis of the soil
	Laboratory	All samples analysed according to SAQP	Eurofins is a suitably qualified NATA accredited laboratory, therefore all samples were analysed in accordance with the appropriate requirements
Precision[4]	Field	SOPs appropriate and complied with	All samples were recovered in accordance with the SOPs
	Laboratory	Laboratory and inter-laboratory duplicates	Laboratory and inter-laboratory duplicates are analysed as a component of the standard operating procedures of Eurofins in accordance with the conditions of their NATA accreditation
		Field duplicates	Field duplicate samples were to be recovered at a rate of 5% and labelled with sample IDs not known to the laboratories and were analysed along with the primary samples by Eurofins as detailed within Section 8.
Accuracy[5]	Field	SOPs appropriate and complied with	All samples were recovered in accordance with the SOPs
	Laboratory	Analysis of field blanks, rinsate blanks, reagent blanks, method blanks, matrix spikes, matrix spike duplicates, surrogate spikes, reference materials, laboratory control samples,	Laboratory quality assurance and quality control samples were incorporated in this investigation by Eurofins as summarised in Section 9.6.

DQI	Consideration		Compliance
		and laboratory-prepared spikes	

Notes: SOP = Standard Operating Procedures; SAQP = Sampling, Analysis and Quality Plan; LOR = Limit of Reporting

1. *A measure of the amount of useable data (expressed as %) from a data collection activity.*
2. *The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event.*
3. *The confidence (expressed qualitatively) that data are representative of each media present on the site.*
4. *A quantitative measure of the variability (or reproducibility) of data.*
5. *A quantitative measure of the closeness of reported data to the true value.*

7.7 Step 7: Optimise the Design

In order to optimise the design, a sampling program was developed in accordance with the NSW EPA (1995) *Contaminated Sites: Sampling Design Guidelines*. Quality assurance and quality control procedures were implemented as outlined within **Section 9**.

8. SAMPLING PROGRAM

8.1 Field Investigation

Fieldwork for this investigation was carried out on 14 October 2021 and included drilling of twenty (20) boreholes. Boreholes were advanced by both hand auger and a vehicle-mounted auger to a maximum depth of 0.2 m below ground level (bgl). The sampling locations are provided in Figure 2. Environmental soil samples were collected from the auger and held for selected analysis.

An additional Contamination Assessment was conducted on the 29 August 2022, for the assessment of asbestos in soils within the footprint for the former dwelling located on the central southern boundary within the site. Fieldwork for this investigation included the test pitting of four (4) test pits and soil samples were collected at an approximate depth of 0.15 m (bgl). The sampling locations are provided in Figure 3.

Due to extensive grass / vegetation onsite at the time of the additional Contamination Assessment, a visual inspection for suspected ACM could not be conducted effectively, Geotesta recommends the requirement for an Unexpected Finds Protocol (UFP) when the site is cleared.

8.2 Sampling Program

The sampling locations are illustrated in Figures 2 and 3 (Appendix A) for the site, respectively. Soil samples were collected to a maximum depth of 0.15 m (bgl). Standard procedures were used for sampling and soil sampling methodology was completed to meet data quality objectives. Standard procedures (sampling directly from the retracted auger and via 7 mm sieving) are described in Section 9 below were used for sampling and soil sampling methodology was completed to meet data quality objectives.

8.3 Rationale for Sampling Program and Location

Samples numbers are not in accordance with superseded *NSW EPA Sampling Guidelines (1995*), given the PSI was conducted with a limited sampling program, the sampling point regime does not meet Sampling Design requirements but based on use of entire site was used for market gardening, with a former structure in the southern section of the site, the sampling point numbers are sufficient for this investigation.

The justification of the sampling point regime for the assessment was based on the investigator's knowledge, operational requirements, experience, history of the Site, and the

requirements in the *Department of Environment and Conservation (NSW) "Guidelines for Assessing Former Orchards and Market Gardens".* All historical investigations and anecdotal evidence supported the sampling approach adopted and provided for samples to be collected in a manner that ensured an unbiased statistical. All the AECs were based on the extensive market garden history and site observations involved the investigation of Heavy Metals, OCP/OPP and Asbestos as primary targets.

8.4 Analytical Program

Samples were to be analysed to provide information for the characterisation of the most likely contaminated soils. This allowed the assessment of soils samples against the Site Acceptance Criteria. All analyses were to be carried out by NATA certified laboratory Eurofins MGT in accordance with Chain of Custody (CoC) instructions supplied by Geotesta. The samples were checked for Heavy Metals, OCP/OPP and Asbestos. Summary of the soil laboratory analyses is presented in Table 7. The details of sample types and depths are provided in Table 8.

Table 7: Summary of soil laboratory program

COC	Number of samples analysed
Heavy Metals[2]	20
Suite B14[3]	20
Asbestos	4

Notes:

[1]Heavy metals: **Arsenic, cadmium, Chromium, copper, lead, Mercury, Nickel, Zinc**

[2]Suite B14: **OCP and OPP**

Table 8: Samples Depth and Requested Lab Tests

Sample ID (BH)	Depth (m)	Sample Type	HM[1]	Suite B14[2]	Asbestos
Di1	0.15	Silty Clay	×	×	-
Di2	0.15	Silty Clay	×	×	-
Di3	0.15	Silty Clay	×	×	-
Di4	0.15	Silty Clay	×	×	-
Di5	0.15	Topsoil	×	×	-
Di6	0.15	Silty Clay	×	×	-
Di7	0.15	Silty Clay	×	×	-
Di8	0.15	Silty Clay	×	×	-
Di9	0.15	Silty Clay	×	×	-
Di10	0.10	Topsoil	×	×	-
Di11	0.15	Topsoil	×	×	-
Di12	0.15	Silty Clay	×	×	-
Di13	0.15	Silty Clay	×	×	-
Di14	0.10	Topsoil	×	×	-
Di15	0.15	Topsoil	×	×	-
Di16	0.15	Silty Clay	×	×	-
Di17	0.15	Topsoil	×	×	-
Di18	0.15	Silty Clay	×	×	-
Di19	0.15	Silty Clay	×	×	-
Di20	0.15	Topsoil	×	×	-
ASB1	0.15	Topsoil	-	-	×
ASB2	0.15	Topsoil	-	-	×
ASB3	0.15	Topsoil	-	-	×
ASB4	0.15	Topsoil	-	-	×

[1]HM: Heavy metal
[2]Suite B14: OCP, OPP

8.5 Visual Inspection

During the sampling works for the site contamination investigation, a visual inspection was conducted to ensure no signs of contamination were visible, or odours encountered within the ground surfaces. Due to extensive grass cover a visual inspection for suspected ACM could not be conducted effectively, Geotesta recommends the requirement for an Unexpected Finds Protocol (UFP) when the site is cleared.

8.6 Soil Logging

Boreholes were logged by an experienced environmental/geotechnical engineer in accordance with Standard procedures. The boreholes logs are attached to this report in Appendix D.

9. SAMPLING QUALITY ASSURANCE AND QUALITY CONTROL

9.1 Sampling Procedures

General soil sampling procedures included wearing of plastic disposable gloves when handling sampling equipment and soil and changed between collections of samples. All sampling equipment was clean prior to commencement of sampling. Equipment for soil sampling included a vehicle-mounted auger, stainless-steel sampling shovel and a 7 mm sieve. The soil samples were collected from the auger via a sampling shovel and placed into sample jars and collected from test pitting via a sampling shovel and placed onto the 7 mm sieve for asbestos bag sampling after sieving. All equipment was decontaminated between samplings. The following measures have been utilized during the sampling to achieve the sampling quality controls.

9.2 Sample Containers

Soil samples collected during the investigation were placed immediately into laboratory prepared glass jars with Teflon lids and plastic bags. Standard identification labels were adhered to each individual container and labelled according to depth, date, sampling team.

9.3 Sample Tracking and Identification

All samples were identified with a unique sample number and all sampling details were included on the sample label and were reproduced on the field sample log and chain of custody records. Samples were received at the laboratory in accordance with NEPM requirements. Refer to Appendix F for the Sample Receipt Advice.

9.4 Decontamination

All equipment used in the sampling program, which included a vehicle-mounted auger, stainless steel sampling shovel and a 7 mm sieve were decontaminated prior to use and between samples to prevent cross contamination. Decontamination of equipment involved the following procedures:

- Cleaning equipment in potable water to remove gross contamination;

- Cleaning in a solution of Decon-90TM;

- Rinsing in clean demineralised water then wiping with clean lint free cloths.

9.5 Sample Transport

All samples were packed in ice from the time of collection and were transported under chain of custody from the Site to Eurofins MGT Services in Lane Cove. During the project, the

laboratory reported that all the samples arrived intact, with appropriate preservation medium and were analysed within their relative holding times for the respective analytes.

9.6 Analytical QA/QC Procedures

Quality control is achieved by utilising NATA accredited laboratories, using standard methods supported by internal duplicates, checking of high, abnormal, or otherwise anomalous results against background and other chemical results for the sample concerned.

Quality assurance is achieved by confirming field or anticipated results based upon the comparison of field observations with laboratory results. Two duplicate samples (D1 & D2) were taken for one (1) day of sampling and were duplicate samples of parent samples Di1 and Di20, respectively.

A Field Blank was taken as part of the Quality assurance to ensure no cross-contamination has taken place.

In addition, the laboratory undertakes additional duplicate analysis as part of their internal quality assurance program. Chain of Custody documentations were used to ensure that sample tracking and custody can be cross-checked at any point in the transfer of samples from the field to hand-over to the laboratory.

10. ASSESSMENT CRITERIA

The respective soil Site Assessment Criteria (SAC) have been amended to reflect the change of ownership and intended use of the property and are provided in the following sections. The *National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), NEPC 2013,* Canberra (referred to as ASC NEPM 2013) was used to determine the SAC.

10.1 Heavy Metals and OCP/OPP

Based on the proposed development, Health Investigation levels (HIL D) – Commercial / Industrial (*ASC NEPM 1999, amended 2013*) were adopted as the Soil Assessment Criteria (SAC) for Heavy Metals, OCP and OPP for this investigation.

The bonded asbestos Health Screening Levels (HSLs) in soils (*NEPM 2013*) were adopted for the Site. In addition to soil samples tested for asbestos, the 'presence/absence' of asbestos in soil material has been adopted as the SAC.

The sites intended land use is HIL D & HSL D – Commercial / Industrial, includes premises such as shops, offices, factories and industrial sites.

Table 9 presents HILs for Heavy Metals and Pesticides (OCP/OPP) and HSLs for Asbestos, which is obtained from Tables 1A (1) & 7 in *Schedule B1 of NEPM (2013)* for Commercial / Industrial D.

Table 9: Site Assessment Criteria for Soils (mg/kg)

Analytes	HILs- Commercial / Industrial D [1]	HSLs- Commercial / Industrial D [1]
Arsenic	3,000	--
Cadmium	900	--
Chromium (VI)	3,600	--
Copper	240,000	--
Lead	1,500	--
Mercury (inorganic)	730	--
Nickel	6,000	--
Zinc	400,000	--
Pesticides:		
Aldrin/Dieldrin	45	--
Chlordane	530	--
DDT+DDE+DDD	3,600	--
Chlorpyrifos	2,000	--
Endosulfan	2,000	--
Endrin	100	--
Heptachlor	50	--
HCB	80	--
Methoxychlor	2,500	--
Toxaphene	160	--
Asbestos:		
Bonded ACM[2],	--	0.05 %
Friable Asbestos[3] (FA), Asbestos Fines[4] (AF),	--	0.001 %
Surface Asbestos (0.1m)	--	No visible asbestos

1- Criteria adopted for Commercial/industrial areas of the Site

2- Bonded ACM (bonded Asbestos) - asbestos-containing-material which is in sound condition and where the asbestos is bound in a matrix such as cement or resin (e.g. asbestos fencing and vinyl tiles). Bonded ACM refers to, in this instance, material that cannot pass a 7 mm x 7 mm sieve.

3- Fibrous Asbestos - friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This material is in a degraded condition such that it can be broken or crumbled by hand pressure.

4- Asbestos Fines - AF includes free fibres, small fibre bundles and also small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve.

11. RESULTS

11.1 Subsurface Conditions

A summary of sub-surface soil conditions encountered in the site is presented below:

Based on the fieldwork results, an approximately 0.1 m–0.2 m topsoil layer was observed in all boreholes.

The material below the topsoil material was firm to stiff Silty CLAY. It was found between 0.1 m and up to 0.9 m in depth during the geotechnical engineering site investigation.

Bedrock was encountered in borehole (Di1) at depths varying between 0.9 m – 2.5 m and comprised an extremely to highly weathered and very low strength shale. The bed rock encountered in the Borehole# Di1 was drilled for the geotechnical investigation.

Groundwater was not encountered within any boreholes.

11.2 Laboratory Analytical Results

Selected soil samples were analysed for the COPCs. A summary of analytical results follows. The lab test reports are presented in Appendix F.

11.2.1 Heavy Metals (HM)

A total of twenty (20) soil samples were analysed for heavy metals. The results of the laboratory results for the heavy metal components are presented in Table 10. The 95% UCL was calculated as a statistical analysis of the heavy metal detections including minimum, maximum and average along with the adopted SAC, and is shown in Table 11.

Table 10: Heavy Metal Detections in soil samples (mg/kg)

	Sample Depth (m)	Arsenic (As)	Cadmium (Cd)	Chromium (total) (Cr)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Zinc (Zn)
Di1	0.15	**17**	< 0.4	**26**	**44**	**33**	< 0.1	**11**	**62**
Di2	0.15	**12**	< 0.4	**26**	**45**	**26**	< 0.1	**8.7**	**48**
Di3	0.15	**14**	< 0.4	**36**	**44**	**30**	< 0.1	**11**	**63**
Di4	0.15	**8.8**	< 0.4	**25**	**46**	**24**	< 0.1	**11**	**56**
Di5	0.15	**16**	< 0.4	**28**	**39**	**29**	< 0.1	**8.8**	**54**
Di6	0.15	**13**	< 0.4	**25**	**63**	**27**	< 0.1	**8.5**	**48**
Di7	0.15	**16**	< 0.4	**29**	**43**	**36**	< 0.1	**11**	**80**
Di8	0.15	**11**	< 0.4	**28**	**43**	**25**	< 0.1	**11**	**56**
Di9	0.15	**12**	< 0.4	**26**	**33**	**21**	< 0.1	**10**	**52**
Di10	0.10	**13**	< 0.4	**25**	**55**	**25**	< 0.1	**9.7**	**75**
Di11	0.15	**11**	< 0.4	**27**	**38**	**23**	< 0.1	**9.9**	**52**
Di12	0.15	**7.3**	< 0.4	**44**	**43**	**20**	< 0.1	**27**	**75**
Di13	0.15	**15**	< 0.4	**26**	**42**	**26**	< 0.1	**10**	**61**
Di14	0.10	**12**	< 0.4	**26**	**52**	**29**	< 0.1	**10**	**97**
Di15	0.15	**24**	< 0.4	**24**	**54**	**45**	< 0.1	**14**	**140**
Di16	0.15	**11**	< 0.4	**33**	**41**	**36**	< 0.1	**11**	**84**
Di17	0.15	**16**	< 0.4	**27**	**45**	**23**	< 0.1	**13**	**59**
Di18	0.15	**20**	< 0.4	**25**	**47**	**53**	< 0.1	**13**	**170**
Di19	0.15	**7.9**	< 0.4	**18**	**61**	**28**	< 0.1	**10**	**110**
Di20	0.15	**8.5**	< 0.4	**22**	**100**	**23**	< 0.1	**11**	**99**

Note- Chromium is total chromium and includes trivalent and hexavalent chromium.

Table 11: Statistical analysis of Heavy Metal Detections in Soil samples (mg/kg)

	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn
Samples count [1]	20	20	20	20	20	20	20	20
Minimum	7.3	- [3]	18	33	20	- [3]	8.5	48
Maximum	**24**	- [3]	**44**	**100**	**53**	- [3]	**27**	**170**
Average	13.3	- [3]	27.3	48.9	29.1	- [3]	11.5	77.1
Standard Deviation [2]	5.02	- [3]	2.07	21.13	7.90	- [3]	1.90	31.99
95% Confidence Level [2]	4.65	- [3]	1.91	19.54	7.31	- [3]	1.76	29.58
HIL D	**3,000**	**900**	**3,600**	**240,000**	**1,500**	**730**	**6,000**	**400,000**
No. of Exceedances	0	0	0	0	0	0	0	0

[1] Note: The higher concentration within the Parent (Di1 & Di20) / Duplicate pair (D1 & D2) were adopted within the results table.

[2] Note: 95% Confidence Level calculated within the Topsoil Horizon

[3] - Insufficient data points

All detected concentrations of heavy metals were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC) – Health Investigation Levels (HIL D).

11.2.2 Organochlorine Pesticides / Organophosphorus Pesticides (OCP/OPP)

A total of twenty (20) samples were analysed for a range of Organochlorine and Organophosphorus pesticides. Tables 12 and 13 presents the OCP/OPP results.

Table 12: OCP/OPP (Pesticides) Detections in soil samples (mg/kg)

	Sample Depth (m)	DDT+DDE+ DDD	Aldrin and Dieldrin	Endrin	Chlordane Total	Toxaphene	Chlorpyrifos
Di1	0.15	**0.06**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di2	0.15	**0.17**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di3	0.15	< 0.4	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di4	0.15	**0.14**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di5	0.15	**0.12**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di6	0.15	**0.41**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di7	0.15	**0.27**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di8	0.15	**0.25**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di9	0.15	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di10	0.10	**0.15**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di11	0.15	**0.24**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di12	0.15	**0.27**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di13	0.15	**0.06**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di14	0.10	**0.05**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di15	0.15	**0.35**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di16	0.15	**0.24**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di17	0.15	< 0.1	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di18	0.15	**0.48**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di19	0.15	**0.09**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di20	0.15	**0.13**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
HIL D		**3,600**	**45**	**100**	**530**	**160**	**2,000**
No. of Exceedances		0	0	0	0	0	0

Table 13: OCP (Pesticides) Detections in soil samples (mg/kg)

	Sample Depth (m)	Endosulfan [1]	HCB	Heptachlor	Methoxychlor
Di1	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di2	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di3	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di4	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di5	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di6	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di7	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di8	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di9	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di10	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di11	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di12	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di13	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di14	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di15	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di16	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di17	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di18	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di19	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di20	0.15	< 0.15	< 0.05	< 0.05	< 0.05
HIL D		**2,000**	**80**	**50**	**2,500**
No. of Exceedances		0	0	0	0

[1] Note: Sum of Endosulfan I, Endosulfan II and Endosulfan Sulphate

All detected concentrations of OCP/OPP were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (HIL D).

11.2.3 Asbestos

No Asbestos was detected at the Reporting Limit of 0.01% w/w in the samples analysed and were therefore within the Site Assessment Criteria (SAC). Eurofins reported that insufficient sample was received for the identification of Asbestos in soil, as per *NEPM & WA Guidelines* - 0.001% w/w.

11.3 Evaluation Analytical Quality Assurance

11.3.1 Duplicate Samples

Two (2) duplicate samples were recovered to analyse the precision and reproducibility of the conducted analysis. The duplicate samples were labelled with an identification number not known to the laboratory and analysed in the same way as the primary samples. The duplicate sample is analysed by calculating the relative percentage difference (RPD) of the laboratory results for the duplicate and corresponding primary sample. The RPD is a method of normalising two values and allows a comparison between values.

An acceptable RPD of 30% was adopted for this assessment, however, in circumstances where one or both detected concentrations within the duplicate pair were within five (5) times the LOR, an RPD of 100% was considered acceptable.

Upon analysis, the following RPD was in excess of the acceptance criteria (refer to Tables 14 and 15):

- Copper within samples# Di20 and D2 – (RPD of 43.9 % > 30%);

In regard to these RPD exceedances, variations between primary and duplicate samples are expected due to the heterogeneous nature of the soils. As a conservative measure, the higher concentration was adopted as the guiding value in order to minimise the potential to underestimate the level of contamination present. All adopted contaminant concentrations were < HIL/ESL A.

Table 14. Relative Percentage Difference against Di1 and D1

Analyte	LOR	Concentrations		RPD (%)
		Di1	D1	
Arsenic	2	**17**	**17**	**0.0**
Cadmium	0.4	<0.4	<0.4	-
Chromium	5	**26**	**26**	**0.0**
Copper	5	**42**	**44**	**4.7**
Lead	5	**33**	**32**	**3.1**
Mercury	0.1	<0.1	<0.1	-
Nickel	5	**11**	**11**	**0.0**
Zinc	5	**56**	**62**	**10.2**

*Adapted from Eurofins Analytical Report **832883-S (Appendix F)***

Notes: LOR = Limit of Reporting; Asbestos measurement = Detected (D) / not detected (ND). All other analytes measured as mg/kg. *Shaded = RPD exceedance where concentrations are greater than 30%, in circumstances where one or both of the detected concentrations within the duplicate pair were within five (5) times the LOR, an RPD of 100% was considered acceptable.*

Table 15. Relative Percentage Difference against Di20 and D2

Analyte	LOR	Concentrations		RPD (%)
		Di20	D2	
Arsenic	2	**8.5**	**8.4**	**1.2**
Cadmium	0.4	<0.4	<0.4	-
Chromium	5	**19**	**22**	**14.6**
Copper	5	**100**	**64**	**43.9**
Lead	5	**23**	**23**	**0.0**
Mercury	0.1	<0.1	<0.1	-
Nickel	5	**11**	**10**	**9.5**
Zinc	5	**95**	**99**	**4.1**

*Adapted from Eurofins Analytical Report **832883-S (Appendix F)***

Notes: LOR = Limit of Reporting; Asbestos measurement = Detected (D) / not detected (ND). All other analytes measured as mg/kg. *Shaded = RPD exceedance where concentrations are greater than 30%, in circumstances where one or both of the detected concentrations within the duplicate pair were within five (5) times the LOR, an RPD of 100% was considered acceptable.*

The RPD for the duplicate samples analysed by the primary laboratory (Eurofins MGT) were between 0.0 % and 43.9 %, with only one (1) exceedance for copper within samples# Di20 / D2. RPD values could not be determined for Cadmium and Mercury as they were below the laboratory reporting limits. Based on the laboratory QA/QC and the duplicate results the data is considered suitable for use in this environmental assessment of the site.

The internal laboratory QA/QC results which are presented in the laboratory certificates are considered acceptable based on the duplicate and control samples analysed. The overall results suggest that the laboratory analysis carried out is reliable for this assessment.

11.3.2 Field Blank

The field blank sample assesses the potential for the primary sample to be affected by external and environmental factors during transport between the site and laboratory. The field blank sample consists of blank water which is transported to and from the site and laboratory with the primary samples.

Upon analysis of the field blank sample, no concentrations of BTEX or heavy metals were detected above the Limit of Reporting (LOR). As such, there is a minimal potential for cross-contamination to have occurred during the field and trip handling procedures. Refer to Tables 16 and 17.

Table 16. Field Blank Results (mg/L)

Sample	C6-C10	C10-C16	C16-C34	C34-C40
FB1	<0.02	<0.05	<0.1	<0.1
No Detection above LOR				

*Adapted from Eurofins Analytical Report **832883-W (Appendix F)***

Table 17. Field Blank Results (mg/L)

Sample	Arsenic (As)	Cadmium (Cd)	Chromium (Total) (Cr)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Zinc (Zn)
FB1	< 0.001	< 0.0002	< 0.001	< 0.001	<0.001	<0.0001	<0.001	<0.005

*Adapted from Eurofins Analytical Report **832883-W (Appendix F)***

11.3.3 Laboratory QAQC

The laboratory internal QA/QC Reports provided in Appendix F indicated that the appropriate laboratory QA / QC procedures and rates were undertaken for contamination studies, and that:

- Laboratory blank samples were free of contamination;
- Matrix spike recoveries were within the control limits;
- Laboratory duplicate RPDs exceeded the control limits for OCPs/OPP, Eurofins quoted laboratory code Q15[1]; and
- Surrogates and laboratory control samples were within the laboratories acceptable range.

[1] Q15: The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

11.3.4 Conceptual Site Model

Based on the results of the Preliminary Site Investigation, including sampling and analysis results, carried out on the site, the Conceptual Site Model (CSM) has been updated and presented in Table 18.

Table 18 – Updated Conceptual Site Model Post Assessment

AEC	COPC	Likelihood of Contamination	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential mechanisms of exposure	Sampling Completed	Potential & Complete Exposure Pathways
A – Market Garden, Orchards & Agricultural Grazing • Market gardens and orchards used for agricultural purposes may involve fertiliser use, chemical pesticides and herbicide use that may introduce heavy metals, pesticide chemicals into the soil and surface water.	HM and OCP/OPP	Low	• Spraying of pesticides	• Surface soils • Surface water • Aesthetics • Groundwater	• Future site workers and visitors • Site labourers/workers • Residents of adjacent properties • Trespassers	• Direct dermal contact with contaminated soil and/or surface water • Ingestion of contaminated soil • Inhalation of contaminated soil (as dust) • Leaching of soil contaminants to surface water and/or groundwater	Di1 to Di20	• No contamination was identified in soils in the suspected agricultural usage land, therefore there is an incomplete exposure pathway for current and future site users, future construction workers, and soil biota/plants and transitory wildlife. • Incomplete exposure pathway for surface water and groundwater, as no contamination identified above the SAC.
B. Former dwelling within the site: • Pesticides may have been used underneath dwellings. Dwelling construction may	HM, OCP/OPP and Asbestos	Low	• Top-down leaks/spills, flakes/fibres onto soil. • Leaching of soil contaminants	• Surface soils • Surface water • Aesthetics • Groundwater	• Future site workers and visitors • Site labourers/workers	• Direct dermal contact with contaminated soil and/or surface water • Ingestion of contaminated soil	Di1 to Di20 ASB1 to ASB4	• No contamination identified above the SAC was identified in the soil samples within the footprint of the former dwelling, therefore there is an incomplete exposure

include ACM and/or lead based paint systems. • Weathering of potentially hazardous materials (asbestos, lead paint, galvanised metals). • Storage of chemicals in buildings.			to surface water and groundwater.		• Residents of adjacent properties • Trespassers	• Inhalation of contaminated soil (as dust) • Leaching of soil contaminants to surface water and/or groundwater		pathway for current and future site users, future construction workers, and soil biota/plants and transitory wildlife. • Incomplete exposure pathway for surface water and groundwater, as no contamination identified above the SAC.

12. DISCUSSION

12.1 Soil Contamination Summary

Based on the historical review, background review and site inspection, the site was used for agricultural activities from as early as 1947. Small dwelling / structure was situated on the southern boundary, until it was demolished 1978 – 1984 (latest). The site since 1985 has been primarily used as a market garden until 2005. From 2009 to the present date, the site appeared to be vacant land, as was observed during site inspection.

During the onsite investigations, the site was vacant with extensive overgrown vegetation (grass), the former market garden posed the following contaminants of primary concern from heavy metals, OCP/OPP and asbestos.

A summary of the laboratory result is presented as the following:

- All detected concentrations of heavy metals were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC) – Health Investigation Levels (HIL D).
- All detected concentrations of OCP/OPP were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (HIL D).
- No Asbestos was detected at the Reporting Limit of 0.01% w/w in the samples analysed and were therefore within the Site Assessment Criteria (SAC). Eurofins reported that insufficient sample was received for the identification of Asbestos in soil, as per *NEPM & WA Guidelines* - 0.001% w/w.

13. CONCLUSIONS AND RECOMMENDATIONS

Geotesta was originally engaged by The Bathla Group in October 2021 to conduct a Preliminary Site Investigation (PSI) ("*Preliminary Site Investigation (PSI) Report for 495 Fourth Avenue, Austral NSW 2179, Report# NE996, Rev (3), 1 September 2022"*, refer to Appendix G*)*, on the site referred to as 495 Fourth Avenue, Austral NSW 2179.

An additional Data Gap Contamination Assessment ("*Addendum Letter – Data Gap Contamination Assessment, 495 Fourth Avenue, Austral NSW 2179, Letter#NE996_ Addendum Letter_ 26October2022, 26 October 2022*", refer to Appendix H) was conducted on the 29 August 2022 in relation to potential asbestos contamination within the footprint of the former dwelling within the site.

The current PSI Report Rev (4) combines both assessments into a single report and further addresses that the previously assessed property has since transferred in ownership to Fabcot Pty Limited.

A review of the most recent 'Nearmaps' aerial photograph (dated 7 September 2023), indicates that the site condition remains largely unchanged since the Data Gap Contamination Assessment (dated 29 August 2022).

Based on the assessment undertaken, the following conclusions and recommendations can be made:

- All the contaminant concentrations of interest that were analysed were found to be within the site assessment criteria (SAC).
- The conducted Preliminary Site Investigation's limited soil sampling and analysis program indicated a **low** risk of soil and groundwater contamination. It is the opinion of Geotesta Pty Ltd that the site is suitable for the proposed Commercial Development.
- Due to extensive grass / vegetation cover during the site investigations, visual inspections for contamination could not be conducted effectively, Geotesta recommends the requirement for an Unexpected Finds Protocol (UFP) when the site is cleared.

DOCUMENT CONTROL

Date	Version	Report Prepared By:	Report Reviewed and issued by:
22 November 2021	Rev (1)	**Alex Gibson** BSc (Hons) MSc MIEAust Environmental Engineer	**Dr. Mohammad Hossein Bazyar** BEng MEng Ph.D MIEAust CPEng NER Senior Environmental Consultant
08 December 2021	Rev (2)	**Alex Gibson** BSc (Hons) MSc MIEAust Environmental Engineer	**Dr. Mohammad Hossein Bazyar** BEng MEng Ph.D MIEAust CPEng NER Senior Environmental Consultant
01 September 2022	Rev (3)	**Victor Kirpichnikov** MEnv Studies, BSc (Hons), WHS Cert IV Senior Environmental Consultant	**Victor Kirpichnikov** MEnv Studies, BSc (Hons), WHS Cert IV Senior Environmental Consultant
20 October 2023	Rev (4)	**Victor Kirpichnikov** MEnv Studies, BSc (Hons), WHS Cert IV Senior Environmental Consultant	**Victor Kirpichnikov** MEnv Studies, BSc (Hons), WHS Cert IV Senior Environmental Consultant

REFERENCES

NSW Department of Mineral Resources, (1991) Penrith 1:100,000 Geological Sheet 9030.

Bureau of Meteorology (2017), www.bom.gov.au.

EPA NSW, http://www.epa.nsw.gov.au/prclmapp/aboutregister.aspx.

NEPC (1999, amended 2013) National Environmental Protection (Assessment of Site Contamination) Measure (ASC NEPM, 1999 amended 2013).

NSW Department of Environment & Heritage (NSW soil and land information), www.environment.nsw.gov.au.

NSW EPA (2014), Waste Classification Guidelines, Part 1: Classifying waste.

NSW EPA (2020) Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Land.

Standards Australia (2005) AS4482.1 2nd Edition: Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil – Part 1: Non-Volatile and Semi-Volatile Compounds.

NSW EPA (2017) 3rd Ed. Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme

WA DoH (2009) Guidelines for the Assessment, Remediation and Management of Asbestos-contaminated Sites in Western Australia.

State Environmental Planning Policy No 55 (1979), Environmental Planning and Assessment Act 1979.

Standards Australia, 2005. Guide to the sampling and Investigation of Potentially Contaminated Soil, Part 1: Non-volatile and Semi-volatile compounds. AS 4482.1

Planning Certificate Under Section 10.7, Certificate No: 537, 495 Fourth Avenue, Austral NSW 2179, 28 July 2021.

Nearmaps (dated 7 September 2023)

Eurofins Environment Testing Pty Ltd, 15 October 2021, Certificate of Analysis 832883-S, prepared for Geotesta Pty Ltd

Eurofins Environment Testing Pty Ltd, 15 October 2021, Certificate of Analysis 832883-W, prepared for Geotesta Pty Ltd

Eurofins Environment Testing Pty Ltd, 29 August 2022, Certificate of Analysis 918694-AID, prepared for Geotesta Pty Ltd

Information about this report

The report contains the results of a contamination investigation conducted for a specific purpose and client. The results should not be used by other parties, or for other purposes, as they may contain neither adequate nor appropriate information. In particular, the investigation does not cover contamination issues unless specifically required to do so by the client.

Test Hole Logging

The information on the test hole logs (boreholes, test pits, exposures etc.) is based on a visual and tactile assessment, except at the discrete locations where test information is available (field and/or laboratory results). The test hole logs include both factual data and inferred information.

Groundwater

Unless otherwise indicated, the water levels presented on the test hole logs are the levels of free water or seepage in the test hole recorded at the given time of measuring. The actual groundwater level may differ from this recorded level depending on material permeability (i.e. depending on response time of the measuring instrument). Further, variations of this level could occur with time due to such effects as seasonal, environmental and tidal fluctuations or construction activities. Confirmation of groundwater levels, phreatic surfaces or piezometric pressures can only be made by appropriate instrumentation techniques and monitoring programmes.

Interpretation of Results

The discussion or recommendations contained within this report normally are based on a site evaluation from discrete test hole data. Generalized, idealized or inferred subsurface conditions (including any geotechnical cross-sections) have been assumed or prepared by interpolation and/or extrapolation of these data. As such these conditions are an interpretation and must be considered as a guide only.

Change in Conditions

Local variations or anomalies in the generalized ground conditions do occur in the natural environment, particularly between discrete test hole locations. Additionally, certain design or construction procedures may have been assumed in assessing the soil-structure interaction behaviour of the site. Furthermore, conditions may change at the site from those encountered at the time of the geotechnical investigation through construction activities and constantly changing natural forces.

Any change in design, in construction methods, or in ground conditions as noted during construction, from those assumed or reported should be referred to GEOTESTA for appropriate assessment and comment.

Environmental Verification

Verification of the environmental/contamination assumptions and/or model is an integral part of the design process-investigation, construction verification, and performance monitoring. Variability is a feature of the natural environment and, in many instances,

verification of soil or rock quality, or foundation levels, is required. There may be a requirement to extend foundation depths, to modify a foundation system or to conduct monitoring as a result of this natural variability. Allowance for verification by geotechnical personnel accordingly should be recognized and programmed during construction.

Reproduction of Reports

Where it is desired to reproduce, the information contained in our contamination report, or other technical information, for the inclusion in contract documents or engineering specification of the subject development, such reproductions should include at least all of the relevant test hole and test data, together with the appropriate standard description sheets and remarks made in the written report of a factual or descriptive nature. Reports are the subject of copyright and shall not be reproduced either totally or in part without the express permission of Geotesta.

Appendix A

Diagrams

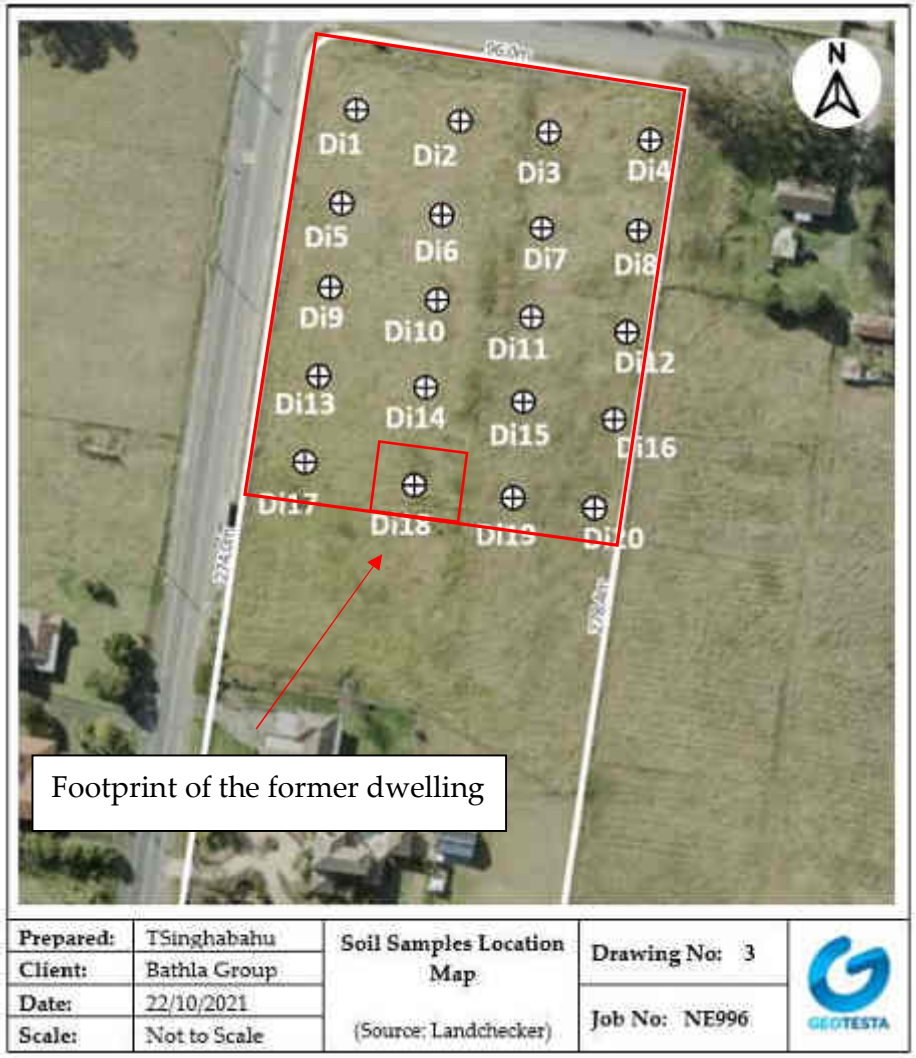

Figure 2: Soil Samples Location

Figure 3 – Additional asbestos sampling locations within the footprint for the former dwelling within the site.

Appendix B

Aerial Photographs

Aerial Photo 1947

Aerial Photo 1965

Aerial Photo 1975

Aerial Photo 1978

Aerial Photo 1984

Aerial Photo 1986

Aerial Photo 1991

Aerial Photo 1998

Aerial Photo 2000

Aerial Photo 2004

Aerial Photo 2005

Aerial Photo 2007

Aerial Photo 2009

Aerial Photo 2011

Aerial Photo 2014

Aerial Photo 2015

Aerial Photo 2016

Aerial Photo 2018

Aerial Photo 2019

Aerial Photo 2020

Aerial Photo 2021

Appendix C

Planning Certificate Under Section 10.7

LIVERPOOL CITY COUNCIL

PLANNING CERTIFICATE UNDER SECTION 10.7
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Ref.: NE996:112030
Ppty: 168726

Cert. No.: 537

Applicant:
GEOTESTA PTY LTD
7 BUSINESS PARK DRV
NOTTING HILL VIC 3168

Receipt No.: 4961351
Receipt Amt.: 53.00
Date: 28-Jul-2021

The information in this certificate is provided pursuant to Section 10.7(2) of the Environmental Planning and Assessment Act (EP&A Act) 1979, as prescribed by Schedule 4 of the Environmental Planning and Assessment Regulation (EP&A Regulation) 2000. The information has been extracted from Council's records, as they existed at the date listed on the certificate. Please note that the accuracy of the information contained within the certificate may change after the date of this certificate due to changes in Legislation, planning controls or the environment of the land.

The information in this certificate is applicable to the land described below.

Legal Description: **PART LOT 12 DP 1103748**

Street Address: **495 FOURTH AVENUE, AUSTRAL NSW 2179**

Note: Items marked with an asterisk (*) may be reliant upon information transmitted to Council by a third party public authority. The accuracy of this information cannot be verified by Council and may be out-of-date. If such information is vital for the proposed land use or development, applicants should instead verify the information with the appropriate authority.

Note: Commonly Used Abbreviations:
LEP: Local Environmental Plan
DCP: Development Control Plan
SEPP: State Environmental Planning Policy
EPI: Environmental Planning Instrument

1. Names of relevant planning instruments and DCPs

(a) The name of each EPI that applies to the carrying out of development on the land is/are listed below:

LEPs:

Not Applicable

SEPPs*:

SEPP No. 33 – Hazardous and Offensive Development
SEPP No. 50 – Canal Estate Development
SEPP No. 55 – Remediation of Land
SEPP No. 65 – Design Quality of Residential Flat Development
SEPP (Building Sustainability Index: BASIX) 2004
SEPP No. 70 – Affordable Housing (Revised Schemes)
SEPP (Infrastructure) 2007
SEPP (Mining, Petroleum Production and Extractive Industries) 2007
SEPP (Miscellaneous Consent Provisions) 2007
SEPP (State and Regional Development) 2011
SEPP (Education Establishments and Child Care Facilities) 2017
SEPP (Vegetation in Non-Rural Areas) 2017
SEPP (Concurrences and Consents) 2018
SEPP (Primary Production and Rural Development) 2019
SEPP (Koala Habitat Protection) 2019
SEPP (Western Sydney Aerotropolis) 2020
SEPP No 19 – Bushland in Urban Areas
SEPP No 21 – Caravan Parks
SEPP (Exempt and Complying Development Codes) 2008
SEPP (Affordable Rental Housing) 2009
SEPP (Sydney Region Growth Centres) 2006
SEPP No 64 – Advertising and Signage
SEPP (Housing for Seniors or People with a Disability) 2004

Deemed SEPPs*:

SREP No 20 – Hawkesbury – Nepean River (No. 2 – 1997)

(b) The name of each draft EPI, or Planning Proposal (which has been subject to community consultation).

Draft LEPs:

N/A

Draft SEPPs*:

Draft SEPP (Competition) 2010

(c) The name of each DCP that applies to the carrying out of development on the land.

Liverpool Growth Centre Precincts DCP

2. Zoning and land use under relevant LEPs and /or SEPPs

This section contains information required under subclauses 2 and 2A of Schedule 4 of the EP&A Regulation 2000. Subclause 2 of the regulation requires Council to provide information with respect to zoning and land-use in areas zoned by, or proposed to be zoned by, a LEP. Subclause 2A of Schedule 4 of the regulation requires Council to provide information with respect to zoning and land-use in areas which are zoned by, or proposed to be zoned by, the SEPP (Sydney Region Growth Centres) 2006. The land use and zoning information under any EPI applying to the land is given below.

(a) Name of zone, and the EPI from which the land zoning information is derived.

R3 Medium Density Residential - SEPP (Sydney Region Growth Centres) 2006

(b) The purposes for which development may be carried out within the zone without the need for development consent

Home-based child care; Home occupations

(c) The purposes for which development may not be carried out within the zone except with development consent

Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dual occupancies; Dwelling houses; Group homes; Manor homes; Neighbourhood shops; Places of public worship; Residential flat buildings; Roads; Secondary dwellings; Semi-detached dwellings; Seniors housing; Studio dwellings; Any other development not specified in item (b) or (d)

(d) The purposes for which the instrument provides that development is prohibited within the zone

Agriculture; Air transport facilities; Airstrips; Amusement centres; Boat repair facilities; Boat sheds; Business premises; Caravan parks; Cemeteries; Charter and tourism boating facilities; Correctional centres; Crematoria; Depots; Electricity generating works; Entertainment facilities; Extractive industries; Freight transport facilities; Function centres; Helipads; Highway service centres; Home occupations (sex services); Industries; Information and education facilities; Marinas; Moorings; Mortuaries; Office premises; Passenger transport facilities; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Restricted premises; Retail premises; Rural supplies; Service stations; Sex services premises; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Vehicle sales or hire premises; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Wholesale supplies

(a) Name of zone, and the EPI from which the land zoning information is derived.

B1 Neighbourhood Centre - SEPP (Sydney Region Growth Centres) 2006

(b) The purposes for which development may be carried out within the zone without the need for development consent

Home-based child care; Home occupations

(c) The purposes for which development may not be carried out within the zone except with development consent

Amusement centres; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Business premises; Child care centres; Community facilities; Drainage; Educational establishments; Environmental facilities; Environmental protection works; Flood mitigation works; Food and drink premises; Home businesses; Home industries; Hostels; Hotel or motel accommodation; Kiosks; Medical centres; Neighbourhood shops; Office premises; Passenger transport facilities; Places of public worship; Public administration buildings; Recreation areas; Roads; Service stations; Serviced apartments; Shops; Shop top housing; Veterinary hospitals

(d) The purposes for which the instrument provides that development is prohibited within the zone

Any development not specified in item (b) or (c).

(a) Name of zone, and the EPI from which the land zoning information is derived.

RE1 Public Recreation - SEPP (Sydney Region Growth Centres) 2006

(b) The purposes for which development may be carried out within the zone without the need for development consent

Environmental protection works

(c) The purposes for which development may not be carried out within the zone except with development consent

Building identification signs; Business identification signs; Child care centres; Community facilities; Drainage; Environmental facilities; Flood mitigation **works; Information and education facilities; Kiosks; Markets; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Restaurants; Roads; Take away food and drink premises; Water recreation structures; Waterbodies (artificial)**

(d) The purposes for which the instrument provides that development is prohibited within the zone

Any development not specified in item (b) or (c)

Note: Schedule 1 of an EPI and Clause 53 of the SEPP (Western Sydney Aerotropolis SEPP) 2020 permits certain development which would otherwise be prohibited within a zone. Any clause applying to the land is shown below.

(e) If a dwelling house is a permitted use, are there any principal development standards applying to the land that fix minimum land dimensions for the erection of a dwelling house?

No

(f) Does the land include or comprise critical habitat?

No

(g) Is the land is in a conservation area (however described):

No

(h) Is there an item of environmental heritage (however described) situated on the land

No

3. Complying development

The information below outlines whether complying development is permitted on the land as per the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18(1) (c3) and 1.19 SEPP of the (Exempt and Complying Development Codes) 2008 only. The table does not specify whether any code applies to the land; applicants should read the full extent of the code with their building certifier, solicitor, or other professional to determine whether any code applies to the land.

The first column identifies the code(s). The second column describes the extent of the land in which exempt and complying development is permitted, as per the clauses above, for the code(s) given to the immediate left. The third column indicates the reason as to why exempt and complying development is prohibited on some or all of the land, and will be blank if such development is permitted on all of the land.

Code	Extent of the land for which development is permitted:	The reason(s) as to why development is prohibited:

Code	Extent of the land for which development is permitted:	The reason(s) as to why development is prohibited:
Housing Code, Rural Housing Code, Greenfield Housing Code and Low Rise Medium Density Housing Code	**Part**	Part of the land is identified as being **reserved for a public purpose** (Clause 1.19(1)(b) or Clause 1.19(5)(b))
Commercial and Industrial (New Buildings and Additions) Code	**Part**	Part of the land is identified as being **reserved for a public purpose** (Clause 1.19(1)(b) or Clause 1.19(5)(b))
General Development Code, Container Recycling Facilities Code, Fire Safety Code, Housing Alterations Code, Commercial and Industrial Alterations Code, Subdivisions Code, and Demolition Code	**All**	

Note: Despite information in the table above, Complying development codes do not apply and certain Exempt Codes do not apply or are modified in areas subject to land-use zoning under the SEPP (Western Sydney Aerotropolis) 2020.

Note: If council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement below will describe that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

Nil

4. Coastal protection*

Has the Department of Finance, Services and Innovation notified Council of the land being affected by 38 or 39 of the Coastal Protection Act, 1979?

No

4A. Certain information relating to beaches and coasts*

(a) Has an order has been made under Part 4D of the Coastal Protection Act 1979 on the land (or on public land adjacent to that land)?

No

(b) Has Council been notified under section 55X of the Coastal Protection Act 1979 that temporary coastal protection works have been placed on the land (or on public land adjacent to that land), and if works have been so placed, is council is satisfied that the works have been removed and the land restored in accordance with that Act?

Not applicable

4B. Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works*

Has the owner (or any previous owner) of the land consented, in writing, that the land is subject to annual charges under section 496B of the Local Government Act 1993 for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act)?

No

5. Mine subsidence*

Is the land a proclaimed to mine subsidence district within the meaning of the Coal Mine Subsidence Compensation Act 2017?

No

6. Road widening and road realignment

Is the land is affected by any road widening or road realignment under:

(a) Division 2 of Part 3 of the Roads Act 1993?*

No

(b) An EPI?

No

(c) A resolution of the council?

No

7. Council and other public authority policies on hazard risk restrictions

The following table lists hazard/risk policies that have been adopted by Council (or prepared by another public authority and subsequently adopted by Council). The right-most column indicates whether the land is subject to any controls from those policies, but it does not confirm if that hazard/risk is present on the land..

Hazard/Risk	Adopted Policy	Does this hazard/risk policy apply to the land?
Landslip hazard	Western Sydney Aerotropolis DCP 2020	**No**
Bushfire hazard	Liverpool DCP 2008	**No**
	Liverpool Growth Centre Precincts DCP*	**Yes**
	Edmondson Park South DCP 2012	**No**
	Western Sydney Aerotropolis DCP 2020	**No**
	Planning for Bushfire Protection (Rural Fire Services, 2006)*	**Yes**
	Pleasure Point Bushfire Management Plan	**No**
Tidal inundation	Nil	**No**
Subsidence	Nil	**No**
Acid Sulphate Soils	Liverpool LEP 2008	**No**
	Liverpool DCP 2008	**No**
Potentially Contaminated Land	Liverpool DCP 2008	**No**
	Liverpool Growth Centre Precincts DCP*	**Yes**, see Figure 2-8 of Schedule 1 of the Liverpool Growth Centres Precinct DCP
	Western Sydney Aerotropolis DCP 2020	**No**
Potentially Saline Soils	Liverpool DCP 2008	**No**

Hazard/Risk	Adopted Policy	Does this hazard/risk policy apply to the land?
	Liverpool Growth Centre Precincts DCP*	**Yes**, see Figure 2-4 of Schedule 1 of the Liverpool Growth Centres Precinct DCP
	Western Sydney Aerotropolis DCP 2020	**No**

Note: Land for which a policy applies does not confirm that the land is affected by that hazard/risk. For example, all land for which the Liverpool DCP applies is subject to controls relating to contaminated land, as this policy contains triggers and procedures for identifying potential contamination. Applicants are encouraged to review the relevant policy, and other sections of this certificate, to determine what effect, if any, the policy may have on the land.

7A. Flood related development controls information

(1) Is the land, or part of the land, within the flood planning area and subject to flood-related development controls?

No

For details of these controls, please refer to the flooding section of the relevant DCP(s) as specified in Section 1(c) of this certificate.

(2) Is the land, or part of the land, between the flood planning area and the probable maximum flood and subject to flood related development controls?

No

For details of these controls, please refer to the flooding section of the relevant DCP(s) as specified in Section 1(c) of this certificate.

Note:

Flood planning area has the same meaning as in the Floodplain Development Manual.

Floodplain Development Manual means the Floodplain Development Manual (ISBN 0 7347 5476 0) published by the NSW Government in April 2005.

Probable maximum flood has the same meaning as in the Floodplain Development Manual.

8. Land reserved for acquisition

Does a LEP, draft LEP, SEPP or draft SEPP identify the acquisition of the land, or part of the land, by a public authority, as referred to in section 3.15 of the Act?

Yes

9. Contribution Plans

Liverpool Contributions Plan 2014 - Austral and Leppington North Precincts

9A. Biodiversity certified land*

Is the land, or part of the land, biodiversity certified land (within the meaning of Part 8 of the Biodiversity Conservation Act 2016)?

Yes, part/all of the land is bio-diversity certified land

For information about what biodiversity certification means if your property is "Yes, certified" or "Yes, non-certified", please visit: https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/biodiversity-certification

10. Biodiversity stewardship sites *

Is the land subject to a Biodiversity stewardship sites under Part 5 of the Biodiversity Conservation Act 2016, as notified to Council by the Chief Executive of the Office of Environment and Heritage?

No

10A. Native vegetation clearing set asides*

Is the land a set aside area under section 60ZC of the Local Land Services Act 2013, as notified of the existence of the set aside area by Local Land Services or the public register?

No

11. Bushfire prone land

Is the land or part of the land, bushfire prone land as defined by the EP&A Act 1979?

Yes, part of the land is bushfire prone land

12. Property vegetation plans*

Is Council aware of the land being subject to a Property Vegetation Plan under the Native Vegetation Act 2003?

No, Liverpool is excluded from the operation of the Native Vegetation Act 2003

13. Orders under Trees (Disputes between Neighbours) Act 2006*

Does an order, made under the Trees (Disputes Between Neighbours) Act 2006 in relation to carrying out of work in relation to a tree on the land, apply?

No, Council has not been notified of an order

14. Directions under Part 3A*

Is there a direction (made by the Minister) that a provision of an EPI in relation to a development does not have effect?

No

15. Site compatibility certificates and conditions for seniors housing*

(a) Is there is a current site compatibility certificate (seniors housing), in respect of proposed development on the land?

No, Council has not been notified of an order.

16. Site compatibility certificates for infrastructure, schools or TAFE establishment *

(a) s there is a current site compatibility certificate (infrastructure) or site compatibility certificate (schools or TAFE establishments), in respect of proposed development on the land?

No, Council has not been notified of an order

17. Site compatibility certificates and conditions for affordable rental housing*

Is there is a current site compatibility certificate (Affordable housing), in respect of proposed development on the land?

No, Council has not been notified of an order.

18. Paper subdivision information*

Does any development plan adopted by a relevant authority (or proposed plan subject to a consent ballot) apply to the land? If so the date of the subdivision order that applies to the land.

No

19. Site verification certificates*

Does a current site verification certificate, apply to the land?

No, Council is not aware of a site verification certificate

20. Loose-fill asbestos insulation *

Is a dwelling on the land listed on the register (maintained by the NSW Department of Fair Trading) as containing loose-fill asbestos insulation?

No

Note: despite any listing on the register, any buildings constructed before 1980 may contain loose-fill asbestos insulation or other asbestos products.

21. Affected building notices and building product rectification orders*

Is there any affected building notice (as in Part 4 of the Building Products (Safety) Act 2017) of which the council is aware that is in force in respect of the land?

No

Is there any building product rectification order (as in the Building Products (Safety) Act 2017) of which the council is aware that is in force in respect of the land and has not been fully complied with?

No

Is there any notice of intention to make a building product rectification order (as in the Building Products (Safety) Act 2017) of which the council is aware has been given in respect of the land and is outstanding?

No

22. State Environmental Planning Policy (Western Sydney Aerotropolis) 2020

As per the SEPP (Western Sydney Aerotropolis) 2020, ss the land:

(a) Subject to an ANEF or ANEC contour of 20 or greater?

No

(b1) Affected by the 6km Lighting Intensity Area, or Light Control Zone?

No

(b2) Affected by the Windshear Assessment Trigger Are?

No

(c) Affected by the Obstacle Limitation Surface Are?

Yes

(d) Affected by the Public Safety Area on the Public Safety Area Map?

No

(e1) Within the 3km zone of the Wildlife Buffer Zone Map?

No

(e2) Within the 13km zone of the Wildlife Buffer Zone Map?

Yes

Note: the table above only specifies whether the land is impacted by planning controls related to the Western Sydney Airport. Planning controls also relate to the Bankstown Airport, and are not reflected in this table.

23. Contaminated land

Is the land:

(a) Significantly contaminated land within the meaning of that Act?

No

(b) Subject to a management order within the meaning of that Act?

No

(c) Subject of an approved voluntary management proposal within the meaning of that Act?

No

(d) Subject to an ongoing maintenance order within the meaning of that Act?

No

(e) Subject of a site audit statement within the meaning of that Act? *

No

Note: in this clause 'the Act' refers to the Contaminated Land Management Act 1997.

E Jackson

For further information, please contact
CALL CENTRE – 1300 36 2170

Eddie Jackson

Chief Executive Officer
Liverpool City Council

Appendix D

Borehole Logs

Di1 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.7	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m
0.7-0.9				Stiff	-
0.9-2.5	-	SHALE with clay seam, extremely weathered, very low strength, light-brown	Moist	-	Groundwater not encountered

Di2 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di3 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di4 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di5 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Di6 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.3	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di7 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di8 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.3	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di9 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.3	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di10 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.1m Groundwater not encountered

Di11 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Di12 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di13 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di14 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Di15 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Di16 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.3	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di17 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Di18 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di19 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di20 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.15	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

ASB1 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.15	-	Topsoil: Brown Silty Clay / Soil with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

ASB2 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.15	-	Topsoil: Brown Silty Clay / Soil with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

ASB3 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.15	-	Topsoil: Brown Silty Clay / Soil with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

ASB4 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.15	-	Topsoil: Brown Silty Clay / Soil with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Appendix E

Photographic Log

Photograph 1 – view of the extensive vegetation, facing south.

Photograph 2 – view of the extensive vegetation, within the area of the footprint of the former dwelling.

Appendix F

Laboratory Documentation

CHAIN OF CUSTODY RECORD

Company	Geotesta	Project No	NE053	Project Manager	
Address	628-32 Foundary Road Seven Hills	Project Name	[illegible]	Report Email	
Contact Name	Dr. Mohammad Hossein Bagyar				
Phone No	452454418				
Email					
Purchase Order					
Quote ID	[illegible]				

Client Sample ID	Date	Matrix	[illegible]	[illegible]	[illegible]	TRH	PAH	[illegible]	Asbestos	VOC
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
D8	14/10/21	Soil		X	X					
D9	14/10/21	Soil		X	X					
D10	14/10/21	Soil		X	X					
D11	14/10/21	Soil		X	X					
D12	14/10/21	Soil		X	X					
D13	14/10/21	Soil		X	X					
D14	14/10/21	Soil		X	X					
D15	14/10/21	Soil		X	X					
[illegible]	14/10/21	Soil		X	X					
[illegible]	14/10/21	Soil		X	X					
[illegible]	14/10/21	Soil		X	X					
[illegible]	14/10/21	Soil		X	X					
[illegible]	14/10/21	Soil		X	X					
D1	14/10/21	Soil		X						
[illegible]	14/10/21	Soil		X						
[illegible]	14/10/21	Soil		X		X				
[illegible]	14/10/21	Soil				X				
Total Counts				23	20	2				

Method of Shipment: Courier ( ) Hand Delivered Postal Name Signature Date Time

Laboratory Use Only — Received By | SYD | BNE | MEL | PER | ADL | NEW | Signature Date Time Temperature 18.4

Received By Signature Date Time Report No

332883

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Geotesta Pty Ltd (NSW)
Contact name:	- Mohammad Hossein Bazyar
Project name:	495 FOURTH AVENUE AUSTRAL
Project ID:	NE996
Turnaround time:	5 Day
Date/Time received	Oct 15, 2021 6:10 PM
Eurofins reference	832883

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
×	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
×	Split sample sent to requested external lab.
×	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Trip blank, spike and spike lab logged for BTEX analysis, FB1 has wrong matrix in the COC, TRH will be analysed using vials provided.
Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to - Mohammad Hossein Bazyar - mb@geotesta.com.au.

Note: A copy of these results will also be delivered to the general Geotesta Pty Ltd (NSW) email address.

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- Mohammad Hossein Bazyar**

Report **832883-S**
Project name 495 FOURTH AVENUE AUSTRAL
Project ID NE996
Received Date Oct 15, 2021

Client Sample ID			**Di1**	**Di2**	**Di3**	**Di4**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S21-Oc35714**	**S21-Oc35715**	**S21-Oc35716**	**S21-Oc35717**
Date Sampled			**Oct 14, 2021**	**Oct 14, 2021**	**Oct 14, 2021**	**Oct 14, 2021**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.06	0.17	< 0.4	0.14
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	0.06	0.17	< 0.4	0.14
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	0.17	< 0.4	0.14
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	105	110	INT	129
Tetrachloro-m-xylene (surr.)	1	%	125	123	129	133
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			Di1	Di2	Di3	Di4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35714	S21-Oc35715	S21-Oc35716	S21-Oc35717
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	113	120	INT	132
Heavy Metals						
Arsenic	2	mg/kg	17	12	14	8.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	26	26	36	25
Copper	5	mg/kg	42	45	44	46
Lead	5	mg/kg	33	26	30	24
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	11	8.7	11	11
Zinc	5	mg/kg	56	48	63	56
% Moisture	1	%	20	16	18	20

Client Sample ID			Di5	Di6	Di7	Di8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35718	S21-Oc35719	S21-Oc35720	S21-Oc35721
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.12	0.41	0.27	0.25
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	0.12	0.41	0.27	0.25
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	0.12	0.41	0.27	0.25
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	133	134	121	133
Tetrachloro-m-xylene (surr.)	1	%	135	139	132	139
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			Di5	Di6	Di7	Di8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35718	S21-Oc35719	S21-Oc35720	S21-Oc35721
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	137	141	129	137
Heavy Metals						
Arsenic	2	mg/kg	16	13	16	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	28	25	29	28
Copper	5	mg/kg	39	63	43	43
Lead	5	mg/kg	29	27	36	25
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	8.8	8.5	11	11
Zinc	5	mg/kg	54	48	80	56
% Moisture	1	%	31	19	18	21

Client Sample ID			Di9	Di10	Di11	Di12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35722	S21-Oc35723	S21-Oc35724	S21-Oc35725
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	0.15	0.24	0.27
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			Di9	Di10	Di11	Di12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35722	S21-Oc35723	S21-Oc35724	S21-Oc35725
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	0.15	0.24	0.27
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	0.15	0.24	0.27
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	124	120	121	114
Tetrachloro-m-xylene (surr.)	1	%	142	131	134	125
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	142	128	128	117

Client Sample ID			Di9	Di10	Di11	Di12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35722	S21-Oc35723	S21-Oc35724	S21-Oc35725
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	12	13	11	7.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	26	25	27	44
Copper	5	mg/kg	33	55	38	43
Lead	5	mg/kg	21	25	23	20
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	10	9.7	9.9	27
Zinc	5	mg/kg	52	75	52	75
% Moisture	1	%	19	21	21	23

Client Sample ID			Di13	Di14	Di15	Di16
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35726	S21-Oc35727	S21-Oc35728	S21-Oc35729
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.06	0.05	0.35	0.24
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	0.06	0.05	0.35	0.24
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	0.35	0.24
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	123	135	104	111
Tetrachloro-m-xylene (surr.)	1	%	124	148	104	124

Client Sample ID			Di13	Di14	Di15	Di16
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35726	S21-Oc35727	S21-Oc35728	S21-Oc35729
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	119	141	101	119
Heavy Metals						
Arsenic	2	mg/kg	15	12	24	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	26	26	24	33
Copper	5	mg/kg	42	52	54	41
Lead	5	mg/kg	26	29	45	36
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	10	10	14	11
Zinc	5	mg/kg	61	97	140	84
% Moisture	1	%	21	22	19	15

Client Sample ID			Di17	Di18	Di19	Di20
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35730	S21-Oc35731	S21-Oc35732	S21-Oc35733
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.1	0.42	0.09	0.13
4.4'-DDT	0.05	mg/kg	< 0.05	0.06	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.1	0.48	0.09	0.13
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	0.48	< 0.1	0.13
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	149	119	129	116
Tetrachloro-m-xylene (surr.)	1	%	INT	116	126	117
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			Di17	Di18	Di19	Di20
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35730	S21-Oc35731	S21-Oc35732	S21-Oc35733
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	INT	116	126	119
Heavy Metals						
Arsenic	2	mg/kg	16	20	7.9	8.5
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	27	25	18	19
Copper	5	mg/kg	45	47	61	100
Lead	5	mg/kg	23	53	28	23
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	13	13	10	11
Zinc	5	mg/kg	59	170	110	95
% Moisture	1	%	17	19	20	18

Client Sample ID			D1	D2	TB1	TS1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35734	S21-Oc35735	S21-Oc35737	S21-Oc35741
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	17	8.4	-	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	-
Chromium	5	mg/kg	26	22	-	-
Copper	5	mg/kg	44	64	-	-
Lead	5	mg/kg	32	23	-	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	-
Nickel	5	mg/kg	11	10	-	-
Zinc	5	mg/kg	62	99	-	-
% Moisture	1	%	20	22	-	-
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-

Client Sample ID			D1	D2	TB1	TS1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35734	S21-Oc35735	S21-Oc35737	S21-Oc35741
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
BTEX						
Xylenes - Total*	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	86	-
BTEX						
Benzene	1	%	-	-	-	87
Ethylbenzene	1	%	-	-	-	81
m&p-Xylenes	1	%	-	-	-	80
o-Xylene	1	%	-	-	-	81
Toluene	1	%	-	-	-	85
Xylenes - Total	1	%	-	-	-	81
4-Bromofluorobenzene (surr.)	1	%	-	-	-	82

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Organochlorine Pesticides	Sydney	Oct 21, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Oct 21, 2021	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Metals M8	Sydney	Oct 21, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
BTEX	Sydney	Oct 21, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
% Moisture	Sydney	Oct 18, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- Mohammad Hossein Bazyar**

Report **832883-W**
Project name 495 FOURTH AVENUE AUSTRAL
Project ID NE996
Received Date Oct 15, 2021

Client Sample ID			**FB1**
Sample Matrix			**Water**
Eurofins Sample No.			**S21-Oc35736**
Date Sampled			**Oct 14, 2021**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
Heavy Metals			
Arsenic	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Oct 22, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 22, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 22, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8	Sydney	Oct 22, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 495 FOURTH AVENUE AUSTRAL
Project ID: NE996

Order No.:
Report #: 832883
Phone: 1300852 216
Fax:

Received: Oct 15, 2021 6:10 PM
Due: Oct 25, 2021
Priority: 5 Day
Contact Name: - Mohammad Hossein Bazyar

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Metals M8	BTEX	Suite B14: OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	Di1	Oct 14, 2021		Soil	S21-Oc35714	X		X	X		
2	Di2	Oct 14, 2021		Soil	S21-Oc35715	X		X	X		
3	Di3	Oct 14, 2021		Soil	S21-Oc35716	X		X	X		
4	Di4	Oct 14, 2021		Soil	S21-Oc35717	X		X	X		
5	Di5	Oct 14, 2021		Soil	S21-Oc35718	X		X	X		
6	Di6	Oct 14, 2021		Soil	S21-Oc35719	X		X	X		
7	Di7	Oct 14, 2021		Soil	S21-Oc35720	X		X	X		
8	Di8	Oct 14, 2021		Soil	S21-Oc35721	X		X	X		
9	Di9	Oct 14, 2021		Soil	S21-Oc35722	X		X	X		

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
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Sydney
Unit F3, Building F
16 Mars Road
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NATA # 1261 Site # 20794

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Phone : +61 2 4968 8448
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ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
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NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
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Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 495 FOURTH AVENUE AUSTRAL
Project ID: NE996

Order No.:
Report #: 832883
Phone: 1300852 216
Fax:

Received: Oct 15, 2021 6:10 PM
Due: Oct 25, 2021
Priority: 5 Day
Contact Name: - Mohammad Hossein Bazyar

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Metals M8	BTEX	Suite B14: OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
10	Di10	Oct 14, 2021		Soil	S21-Oc35723	X		X	X		
11	Di11	Oct 14, 2021		Soil	S21-Oc35724	X		X	X		
12	Di12	Oct 14, 2021		Soil	S21-Oc35725	X		X	X		
13	Di13	Oct 14, 2021		Soil	S21-Oc35726	X		X	X		
14	Di14	Oct 14, 2021		Soil	S21-Oc35727	X		X	X		
15	Di15	Oct 14, 2021		Soil	S21-Oc35728	X		X	X		
16	Di16	Oct 14, 2021		Soil	S21-Oc35729	X		X	X		
17	Di17	Oct 14, 2021		Soil	S21-Oc35730	X		X	X		
18	Di18	Oct 14, 2021		Soil	S21-Oc35731	X		X	X		
19	Di19	Oct 14, 2021		Soil	S21-Oc35732	X		X	X		
20	Di20	Oct 14, 2021		Soil	S21-Oc35733	X		X	X		

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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Phone : +64 9 526 45 51
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Seven Hills
NSW 2147

Project Name: 495 FOURTH AVENUE AUSTRAL
Project ID: NE996

Order No.:
Report #: 832883
Phone: 1300852 216
Fax:

Received: Oct 15, 2021 6:10 PM
Due: Oct 25, 2021
Priority: 5 Day
Contact Name: - Mohammad Hossein Bazyar

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Metals M8	BTEX	Suite B14: OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
21	D1	Oct 14, 2021		Soil	S21-Oc35734	X			X		
22	D2	Oct 14, 2021		Soil	S21-Oc35735	X			X		
23	FB1	Oct 14, 2021		Water	S21-Oc35736	X				X	
24	TB1	Oct 14, 2021		Soil	S21-Oc35737		X				
25	TS1	Oct 14, 2021		Soil	S21-Oc35741						X
Test Counts						23	1	20	22	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs..

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	98			70-130	Pass	
TRH C10-C14	%	96			70-130	Pass	
Naphthalene	%	100			70-130	Pass	
TRH C6-C10	%	99			70-130	Pass	
TRH >C10-C16	%	93			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	106			80-120	Pass	
Cadmium	%	90			80-120	Pass	
Chromium	%	108			80-120	Pass	
Copper	%	104			80-120	Pass	
Lead	%	107			80-120	Pass	
Mercury	%	111			80-120	Pass	
Nickel	%	105			80-120	Pass	
Zinc	%	99			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S21-Oc26696	NCP	%	85			70-130	Pass	
TRH C10-C14	S21-Oc42247	NCP	%	121			70-130	Pass	
Naphthalene	S21-Oc26696	NCP	%	87			70-130	Pass	
TRH C6-C10	S21-Oc26696	NCP	%	84			70-130	Pass	
TRH >C10-C16	S21-Oc42247	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S21-Oc28505	NCP	%	107			75-125	Pass	
Cadmium	S21-Oc42253	NCP	%	100			75-125	Pass	
Chromium	S21-Oc42253	NCP	%	95			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper	S21-Oc42253	NCP	%	83			75-125	Pass	
Lead	S21-Oc42253	NCP	%	89			75-125	Pass	
Mercury	S21-Oc42253	NCP	%	101			75-125	Pass	
Nickel	S21-Oc42253	NCP	%	87			75-125	Pass	
Zinc	S21-Oc42253	NCP	%	85			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S21-Oc37228	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S21-Oc42253	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S21-Oc42253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S21-Oc42253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Naphthalene	S21-Oc37228	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S21-Oc37228	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S21-Oc42253	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S21-Oc42253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S21-Oc42253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Oc37252	NCP	mg/L	0.003	0.003	2.0	30%	Pass	
Cadmium	S21-Oc37252	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S21-Oc37252	NCP	mg/L	0.007	0.007	2.0	30%	Pass	
Copper	S21-Oc37252	NCP	mg/L	0.012	0.012	4.0	30%	Pass	
Lead	S21-Oc37252	NCP	mg/L	0.009	0.010	2.0	30%	Pass	
Mercury	S21-Oc37252	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S21-Oc37252	NCP	mg/L	0.006	0.007	2.0	30%	Pass	
Zinc	S21-Oc37252	NCP	mg/L	0.035	0.034	2.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised by:

Asim Khan	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 495 FOURTH AVENUE AUSTRAL
Project ID: NE996

Order No.:
Report #: 832883
Phone: 1300852 216
Fax:

Received: Oct 15, 2021 6:10 PM
Due: Oct 25, 2021
Priority: 5 Day
Contact Name: - Mohammad Hossein Bazyar

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Metals M8	BTEX	Suite B14: OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	Di1	Oct 14, 2021		Soil	S21-Oc35714	X		X	X		
2	Di2	Oct 14, 2021		Soil	S21-Oc35715	X		X	X		
3	Di3	Oct 14, 2021		Soil	S21-Oc35716	X		X	X		
4	Di4	Oct 14, 2021		Soil	S21-Oc35717	X		X	X		
5	Di5	Oct 14, 2021		Soil	S21-Oc35718	X		X	X		
6	Di6	Oct 14, 2021		Soil	S21-Oc35719	X		X	X		
7	Di7	Oct 14, 2021		Soil	S21-Oc35720	X		X	X		
8	Di8	Oct 14, 2021		Soil	S21-Oc35721	X		X	X		
9	Di9	Oct 14, 2021		Soil	S21-Oc35722	X		X	X		

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Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
10	Di10	Oct 14, 2021		Soil	S21-Oc35723	X		X	X		
11	Di11	Oct 14, 2021		Soil	S21-Oc35724	X		X	X		
12	Di12	Oct 14, 2021		Soil	S21-Oc35725	X		X	X		
13	Di13	Oct 14, 2021		Soil	S21-Oc35726	X		X	X		
14	Di14	Oct 14, 2021		Soil	S21-Oc35727	X		X	X		
15	Di15	Oct 14, 2021		Soil	S21-Oc35728	X		X	X		
16	Di16	Oct 14, 2021		Soil	S21-Oc35729	X		X	X		
17	Di17	Oct 14, 2021		Soil	S21-Oc35730	X		X	X		
18	Di18	Oct 14, 2021		Soil	S21-Oc35731	X		X	X		
19	Di19	Oct 14, 2021		Soil	S21-Oc35732	X		X	X		
20	Di20	Oct 14, 2021		Soil	S21-Oc35733	X		X	X		

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6 Monterey Road
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Contact Name: - Mohammad Hossein Bazyar

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Sample Detail						Metals M8	BTEX	Suite B14: OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
21	D1	Oct 14, 2021		Soil	S21-Oc35734	X			X		
22	D2	Oct 14, 2021		Soil	S21-Oc35735	X			X		
23	FB1	Oct 14, 2021		Water	S21-Oc35736	X				X	
24	TB1	Oct 14, 2021		Soil	S21-Oc35737		X				
25	TS1	Oct 14, 2021		Soil	S21-Oc35741						X
Test Counts						23	1	20	22	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs..

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	106			70-130	Pass	
4.4'-DDD	%	109			70-130	Pass	
4.4'-DDE	%	116			70-130	Pass	
4.4'-DDT	%	93			70-130	Pass	
a-HCH	%	105			70-130	Pass	
Aldrin	%	119			70-130	Pass	
b-HCH	%	101			70-130	Pass	
d-HCH	%	106			70-130	Pass	
Dieldrin	%	107			70-130	Pass	
Endosulfan I	%	109			70-130	Pass	
Endosulfan II	%	107			70-130	Pass	
Endosulfan sulphate	%	107			70-130	Pass	
Endrin	%	113			70-130	Pass	
Endrin aldehyde	%	116			70-130	Pass	
Endrin ketone	%	101			70-130	Pass	
g-HCH (Lindane)	%	112			70-130	Pass	
Heptachlor	%	106			70-130	Pass	
Heptachlor epoxide	%	110			70-130	Pass	
Hexachlorobenzene	%	109			70-130	Pass	
Methoxychlor	%	96			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	120			70-130	Pass	
Dimethoate	%	77			70-130	Pass	
Ethion	%	110			70-130	Pass	
Fenitrothion	%	103			70-130	Pass	
Methyl parathion	%	110			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mevinphos	%	90			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	80			80-120	Pass	
Cadmium	%	87			80-120	Pass	
Chromium	%	111			80-120	Pass	
Copper	%	92			80-120	Pass	
Lead	%	111			80-120	Pass	
Mercury	%	99			80-120	Pass	
Nickel	%	94			80-120	Pass	
Zinc	%	110			80-120	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	88			70-130	Pass	
Toluene	%	89			70-130	Pass	
Ethylbenzene	%	90			70-130	Pass	
m&p-Xylenes	%	91			70-130	Pass	
o-Xylene	%	92			70-130	Pass	
Xylenes - Total*	%	91			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Copper	S21-Oc31932	NCP	%	85			75-125	Pass	
Zinc	S21-Oc31932	NCP	%	99			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S21-Oc35720	CP	%	92			75-125	Pass	
Cadmium	S21-Oc35720	CP	%	77			75-125	Pass	
Chromium	S21-Oc35720	CP	%	91			75-125	Pass	
Lead	S21-Oc35720	CP	%	92			75-125	Pass	
Mercury	S21-Oc35720	CP	%	85			75-125	Pass	
Nickel	S21-Oc35720	CP	%	79			75-125	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S21-Oc35722	CP	%	118			70-130	Pass	
4.4'-DDD	S21-Oc35722	CP	%	124			70-130	Pass	
4.4'-DDE	S21-Oc35722	CP	%	118			70-130	Pass	
4.4'-DDT	S21-Oc35722	CP	%	95			70-130	Pass	
a-HCH	S21-Oc35722	CP	%	117			70-130	Pass	
Aldrin	S21-Oc35722	CP	%	115			70-130	Pass	
b-HCH	S21-Oc35722	CP	%	120			70-130	Pass	
d-HCH	S21-Oc35722	CP	%	115			70-130	Pass	
Dieldrin	S21-Oc35722	CP	%	118			70-130	Pass	
Endosulfan I	S21-Oc35722	CP	%	120			70-130	Pass	
Endosulfan II	S21-Oc35722	CP	%	113			70-130	Pass	
Endosulfan sulphate	S21-Oc35722	CP	%	111			70-130	Pass	
Endrin	S21-Oc35722	CP	%	93			70-130	Pass	
Endrin aldehyde	S21-Oc35722	CP	%	106			70-130	Pass	
Endrin ketone	S21-Oc35722	CP	%	120			70-130	Pass	
g-HCH (Lindane)	S21-Oc35722	CP	%	120			70-130	Pass	
Heptachlor	S21-Oc35722	CP	%	114			70-130	Pass	
Heptachlor epoxide	S21-Oc35722	CP	%	113			70-130	Pass	
Hexachlorobenzene	S21-Oc35722	CP	%	122			70-130	Pass	
Methoxychlor	S21-Oc35722	CP	%	95			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S21-Oc35722	CP	%	124			70-130	Pass	
Dimethoate	S21-Oc35722	CP	%	101			70-130	Pass	
Ethion	S21-Oc35722	CP	%	110			70-130	Pass	
Fenitrothion	S21-Oc35722	CP	%	111			70-130	Pass	
Methyl parathion	S21-Oc35722	CP	%	113			70-130	Pass	
Mevinphos	S21-Oc35722	CP	%	112			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S21-Oc45639	NCP	%	73			70-130	Pass	
Toluene	S21-Oc45639	NCP	%	77			70-130	Pass	
Ethylbenzene	S21-Oc45639	NCP	%	79			70-130	Pass	
m&p-Xylenes	S21-Oc45639	NCP	%	80			70-130	Pass	
o-Xylene	S21-Oc45639	NCP	%	81			70-130	Pass	
Xylenes - Total*	S21-Oc45639	NCP	%	80			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Oc35714	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-Oc35714	CP	mg/kg	0.06	0.06	4.0	30%	Pass	
4.4'-DDT	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-Oc35714	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Ethion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S21-Oc35714	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-Oc35714	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S21-Oc32283	NCP	%	21	22	8.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Oc35719	CP	mg/kg	13	16	23	30%	Pass	
Cadmium	S21-Oc35719	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-Oc35719	CP	mg/kg	25	29	17	30%	Pass	
Copper	S21-Oc35719	CP	mg/kg	63	74	16	30%	Pass	
Lead	S21-Oc35719	CP	mg/kg	27	33	21	30%	Pass	
Mercury	S21-Oc35719	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-Oc35719	CP	mg/kg	8.5	10	17	30%	Pass	
Zinc	S21-Oc35719	CP	mg/kg	48	56	16	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Oc35721	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-Oc35721	CP	mg/kg	0.25	0.35	35	30%	Fail	Q15
4.4'-DDT	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Hexachlorobenzene	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-Oc35721	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S21-Oc35721	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-Oc35721	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Oc35729	CP	mg/kg	11	8.1	30	30%	Pass	
Cadmium	S21-Oc35729	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-Oc35729	CP	mg/kg	33	27	22	30%	Pass	
Copper	S21-Oc35729	CP	mg/kg	41	40	1.0	30%	Pass	
Lead	S21-Oc35729	CP	mg/kg	36	34	6.0	30%	Pass	
Mercury	S21-Oc35729	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-Oc35729	CP	mg/kg	11	11	5.0	30%	Pass	
Zinc	S21-Oc35729	CP	mg/kg	84	80	5.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Oc35731	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-Oc35731	CP	mg/kg	0.42	0.30	33	30%	Fail	Q15
4.4'-DDT	S21-Oc35731	CP	mg/kg	0.06	< 0.05	23	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
a-HCH	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S21-Oc35731	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-Oc35731	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S21-Oc35731	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-Oc35731	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S21-Oc45638	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S21-Oc45638	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S21-Oc45638	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S21-Oc45638	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S21-Oc45638	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S21-Oc45638	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Asim Khan	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Sydney
Unit F3 - Building F, 16 Mars Road, Lane Cove
Phone: +61 2 9900 8400
Email: EnviroSampleNSW@eurofins.com.au

Brisbane
Unit 1/21 Smallwood Place, Murarrie
Phone: +617 3902 4600
Email: EnviroSampleQLD@eurofins.com.au

Melbourne
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: EnviroSampleVic@eurofins.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name: Geotesta	Contact Name:	Victor Kirpichnikov / Dr. Mohammad Bazyar	Purchase Order:	NE996	COC Number:
Office Address: Unit 06, 20-22 Foundry Road,	Project Manager:	Victor Kirpichnikov / Dr. Mohammad Bazyar	PROJECT Number:	NE996	Eurofins | mgt quote ID:
Seven Hills 2147	Email for results:	vk@geotesta.com.au, mb@geotesta.c	PROJECT Name:	405 Fourth Avenue Austral NSW	Data output format:
Phone: 452454418					

Special Directions & Comments:

Eurofins \| mgt DI water batch number:

Analytes: Asbestos ID in soil - NEPM & WA Guidelines - 0.001% w/w

Some common holding times (with correct preservation). For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Formaldehyde	7 days	ASLP, TCLP	7 days

	Sample ID	Date	Matrix	Asbestos ID in soil - NEPM & WA Guidelines - 0.001% w/w	500ml P	200m G	4D-T1V2I	60ml F	60ml P	500ml P	Jar	Other	Sample comments:
1	ASB1	29/08/2022	Soil	X							X		Tass sieved
2	ASB2	29/08/2022	Soil	X							X		Tass sieved
3	ASB3	29/08/2022	Soil	X							X		Tass sieved
4	ASB4	29/08/2022	Soil	X							X		Tass sieved
5													
6													
7													
8													
9													
10													
11													
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17													
18													
19													
20													
21													
22													
23													
24													
25													

	Laboratory Staff	Turn around time	Method Of Shipment	
Relinquished By: Victor Kirpichnikov	Received By:	1 DAY ☐ 2 DAY ☐ 3 DAY ☐	Courier	Temperature on arrival:
Date & Time: 29/08/22	Date & Time:	5 DAY ☑ 10 DAY ☐	Hand Delivered	Report number: 918694
Signature:	Signature:		Postal	
			Courier Consignment # :	

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Sample Receipt Advice

Company name:	Geotesta Pty Ltd (NSW)
Contact name:	Victor Kirpichnikov (GEOTESTA)
Project name:	495 FOURTH AVENUE AUSTRAL NSW
Project ID:	NE996
Turnaround time:	5 Day
Date/Time received	Aug 29, 2022 5:42 PM
Eurofins reference	918694

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
×	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
×	Split sample sent to requested external lab.
×	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Victor Kirpichnikov (GEOTESTA) - vk@geotesta.com.au.

Note: A copy of these results will also be delivered to the general Geotesta Pty Ltd (NSW) email address.

Certificate of Analysis

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention:	Victor Kirpichnikov (GEOTESTA)
Report	918694-AID
Project Name	495 FOURTH AVENUE AUSTRAL NSW
Project ID	NE996
Received Date	Aug 29, 2022
Date Reported	Sep 06, 2022

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name 495 FOURTH AVENUE AUSTRAL NSW
Project ID NE996
Date Sampled Aug 29, 2022
Report 918694-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
ASB1	22-Au0067205	Aug 29, 2022	Approximate Sample 95g Sample consisted of: Brown fine-grained clayey soil, plant residue, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
ASB2	22-Au0067206	Aug 29, 2022	Approximate Sample 87g Sample consisted of: Brown fine-grained clayey soil, plant residue, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
ASB3	22-Au0067207	Aug 29, 2022	Approximate Sample 98g Sample consisted of: Brown fine-grained clayey soil, plant residue, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
ASB4	22-Au0067208	Aug 29, 2022	Approximate Sample 115g Sample consisted of: Brown fine-grained clayey soil, plant residue, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Sep 06, 2022	Indefinite

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 495 FOURTH AVENUE AUSTRAL NSW
Project ID: NE996

Order No.:
Report #: 918694
Phone: 1300852 216
Fax:

Received: Aug 29, 2022 5:42 PM
Due: Sep 6, 2022
Priority: 5 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Asbestos - AS4964
Sydney Laboratory - NATA # 1261 Site # 18217						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	ASB1	Aug 29, 2022		Soil	S22-Au0067205	X
2	ASB2	Aug 29, 2022		Soil	S22-Au0067206	X
3	ASB3	Aug 29, 2022		Soil	S22-Au0067207	X
4	ASB4	Aug 29, 2022		Soil	S22-Au0067208	X
Test Counts						4

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Asbestos Counter/Identifier:

Chamath JHM Annakkage	Senior Analyst-Asbestos

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Appendix G

"Preliminary Site Investigation (PSI) Report for 495 Fourth Avenue, Austral NSW 2179, Report# NE996, Rev (3), 1 September 2022"

Geosyntec consultants

engineers | scientists | innovators

Geosyntec Consultants Pty Ltd
ABN 23 154 745 525
Suite 1, Level 9, 189 Kent St
Sydney NSW 2000
www.geosyntec.com.au

1 September 2022

Mr Victor Kirpichnikov
Geotesta Pty Ltd
Unit 6 20-22 Foundry Road
Seven Hills NSW 2147

Via email: vk@geotesta.com.au

Dear Victor,

Re: Review of Contamination Status, 495 Fourth Ave Austral NSW 2179

As requested, as a Certified Environmental Practitioner in Site Contamination, I have reviewed a document entitled 'Preliminary Site Investigation, 495 Fourth Ave Austral NSW 2179 - Document No. NE996, prepared for Bathla Group dated 1 September 2022.

The objective of the investigation was to provide an assessment of the potential ground contamination status of the above property, proposed for a low-density residential development. The investigation was based on information obtained from an initial desktop study, historical photography reviews and a site inspection followed by soil sampling and testing in parts of the site area, formerly used for market gardening. The results of the investigations were then presented in this report. My objective was to review and provide final certification for this report.

Upon my review of the Preliminary Site Investigation (Rev 3), I am satisfied with the report's conclusions and that it was prepared in accordance with the requirements of the relevant standards, legislation and guidelines, namely:

- NSW EPA Contaminated Land Guideline - Consultants Reporting on Contaminated Land (2020).
- State Environmental Planning Policy Resilience and Hazards (Chapter 4); and,
- National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) (NEPM 2013).

I concur with the findings of this preliminary assessment that the site is suitable for low density residential subject to additional investigation in the vicinity of a former residence on site. Should you have any further queries, please contact me on 02 92518070.

Yours sincerely,

Peter Moore
Principal Engineer CEnvP - SC
Geosyntec Consultants Pty Ltd

PRELIMINARY SITE INVESTIGATION REPORT

PROJECT:	**495 Fourth Avenue, Austral NSW 2179**
CLIENT:	**Bathla Group**
DATE:	**1 September 2022**
REPORT No.:	**NE996**

GEOTESTA

GEOTESTA PTY LTD ABN 91 851 620 815
Unit 6/20-22 Foundry Road, Seven Hills, NSW 2147
1300 852 216 info@geotesta.com.au geotesta.com.au

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EXECUTIVE SUMMARY

Geotesta was engaged by Bathla Group to conduct a Preliminary Site Investigation (PSI), on the site referred to as 495 Fourth Avenue, Austral NSW 2179.

The PSI was conducted in general accordance with *"Managing Land Contamination Planning Guidelines SEPP 55"* and this report compiled, taking into consideration the *NSW EPA Consultants reporting on Contaminated Land Guidelines update May 2020*. The PSI contains an appraisal of the site's history and a report based on a visual site inspection and assessment. All relevant information about the site was assessed to determine the potential for site contamination. To support the outcomes of the PSI a limited sampling and analysis program was implemented.

This report is based only on the information provided at the time of this report preparation and may not be valid if changes are made to the site conditions and/or soil and groundwater.

The objectives of this PSI are to:

- assess the past uses of the site and the potential environmental impacts that they may have had on the environmental condition of the site;
- conduct a limited soil sampling and analysis program to assess the current environmental condition;
- identify potential environmental risks associated with the site;
- address the requirements of the planning authority.

The scope of works was developed with referral to the following documents and guidelines:

- Australian Standard AS 4482.1 (2005) *Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Non volatile and semi-volatile compounds;*
- Australian Standard AS 4482.2-1999 *Guide to the sampling and investigation of potentially contaminated soil Part 2: Volatile substances;*
- National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 No1;
- Department of Environment and Conservation NSW: *Guidelines for Assessing Former Market Gardens (2005);* and
- other relevant NSW guidelines and legislation, including the *NSW EPA Sampling Guidelines (1995).*

The scope of works included the following:

- A site inspection;
- historical aerial photographs;
- public record search, such as Council, OEH, EPA etc;
- geological and hydrogeological review;
- conduct a limited soil sampling and analysis program; and
- production of this report on the contamination status of the site.

Activities undertaken to achieve the above objectives are reported and discussed in the following sections.

Based on the historical review, background review and site inspection, the site was used for agricultural activities from as early as 1947. Small dwelling / structure was situated on the southern boundary, until it was demolished 1978 – 1984 (latest). The site since 1985 has been primarily used as a market garden until 2005. From 2009 to the present date, the site appeared to be vacant land, as was observed during site inspection.

A summary of the laboratory results is presented as the following:

- All detected concentrations of heavy metals were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC) – Health Investigation Levels (HIL A) and Ecological Investigation Levels (EIL).
- All detected concentrations of OCP/OPP were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC).

Based on the assessment undertaken, the following conclusions and recommendations can be made:

- All the contaminant concentrations of interest that were analysed were found to be within the site assessment criteria (SAC).
- The conducted Preliminary Site Investigation's limited soil sampling and analysis program indicated a **low** risk of soil and groundwater contamination. It is the opinion of Geotesta Pty Ltd that the site is suitable for the proposed low density residential development pending the results of an additional Data Gap Contamination Assessment.

  - Due to the existence of a data-gap in this investigation, a further Data Gap Assessment in the vicinity of the footprint of the former structure/dwelling located

on the southern boundary is required to address the potential area of concern identified in the AECs by determining the existence of any asbestos contamination. The Data Gap Assessment findings will be issued as an Addendum Letter to this report.

1. INTRODUCTION

Geotesta was engaged by Bathla Group to conduct a Preliminary Site Investigation (PSI) on the site referred to as 495 Fourth Avenue, Austral NSW 2179.

The PSI contains an appraisal of the site's history and a report based on a visual site inspection and assessment. Based on the site's history, the PSI was conducted in accordance with the Department of Environment and Conservation (NSW) contaminated sites guideline: *"Guidelines for Assessing Former Market Gardens (2005)"*. All relevant information about the site was assessed to determine the potential for site contamination. To support the outcomes of the PSI's limited sampling and analysis program was implemented.

This report is based only on the information provided at the time of this report preparation and may not be valid if changes are made to the site conditions and/or soil and groundwater.

2. PLANNING GUIDELINES

The land is to be developed for standard residential use. The planning authority must consider the possibility that the previous land use has the potential to cause contamination of the site as well as the potential risk to health or the environment from that contamination. The PSI encompasses a limited sampling regime to determine if there is a potential for land contamination that has a potential to impact the development application (DA).

The Guidelines recommend that re-zonings, development control plans and development applications (DAs) are backed up by information demonstrating that the land is suitable for the proposed use or can be made suitable, either by remediation or by the way the land is used.

3. OBJECTIVES

The objectives of this PSI are to:

- assess the past uses of the site and the potential environmental impacts that they may have had on the environmental condition of the site;
- conduct a limited soil sampling and analysis program to assess the current environmental condition;
- identify potential environmental risks associated with the site;
- assess the type, extent, and level of potential contamination
- address the requirements of the planning authority.

4. SCOPE OF WORKS

The following scope of works was implemented to achieve the objectives of the PSI.

The PSI was conducted in general accordance with the Australian Standard AS 4482.1 (2005) *Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Non-volatile and semi-volatile compounds*, the Australian Standard AS 4482.2-1999 *Guide to the sampling and investigation of potentially contaminated soil Part 2: Volatile substances*, the National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 No1, and other relevant NSW guidelines and legislation, including the *NSW EPA Sampling Guidelines (1995).*

The scope of works included the following:

- A site inspection;
- historical aerial photographs;
- public record search, such as Council, OEH, EPA etc;
- geological and hydrogeological review;
- conduct a limited soil sampling and analysis program; and
- production of this report on the contamination status of the site.

Activities undertaken to achieve the above objectives are reported and discussed in the following sections.

5. SITE DESCRIPTION

5.1 Site Identification

The site under investigation is situated at 495 Fourth Avenue, Austral NSW 2179 on the north eastern end of Fourth Avenue and is approximately 50 km (by road) west of Sydney CBD. The site is rectangle in shape, with an area of approximately 1.189 ha. The site is located within Liverpool City Council. Site overview is provided in Figure 1.

The site identification detail is presented in Table 1.

Table 1: Site Identification

Site Details	Site Observations
Address	495 Fourth Avenue, Austral NSW 2179
Lot/Section/Plan no:	Lot. 121 DP1220414
Local Government Area	Liverpool City Council
Site Area	1.189 ha
Zoning	B1: Neighbourhood Centre
Current Land Use	Vacant Land

Figure 1. Site Location and features

5.2 Proposed Development

The proposed development of the site is for new low-density residential development including residential lots and street access. The site lies within a B1 Neighbourhood Centre zone. Similar neighbourhood centre zones are to the east of the site. Public Recreation zones are directly south to the site. The site is surrounded by rural residential properties, with a School located to the north.

5.3 Site Details, Location and Topography

At the time of site investigation, the subject site was vacant land, with overgrown dense grass. The site exhibits a relatively distinct downward slope to the north of approximately 5-10 degree.

Regional topographic maps indicate that the site is approximately 84m above sea level, referenced to Australian Height Datum (AHD).

5.4 Geological, Soil Landscapes and Drainage

The Penrith 1:100,000 Geological Sheet indicates that the site is situated on the boundary of the Bringelly Shale of the Wianamatta Group consisting of shale, carbonaceous claystone, claystone, laminite, fine to medium-grained lithic sandstone, rare coal and tuff (Rwb).

The Penrith 1:100,000 Soil Landscape Series Sheet (1989) indicates site soils comprise on the boundary of the Blacktown soil landscape soil landscapes. The Blacktown soil landscape consists of shallow to moderately deep (>1 m) hard setting mottled texture contrast soils, red and brown podzolic soils on crests grading to yellow podzolic soils on lower slopes and in drainage lines.
The nearest environmental receptor is Kemps Creek which is located approximately 1.2 km to the west. The surface flow is to the north and any runoff could eventually flow to Kemps Creek.

5.5 Site Regional Meteorology

The following climate information from the Commonwealth Bureau of Meteorology website (http://www.bom.gov.au/) can be obtained:

- Mean maximum temperature of 24.0°C from January to December at Badgerys Creek NSW, approximately 8.0 km away from the site.
- Mean minimum temperature of 10.9°C from January to December at Badgerys Creek NSW, approximately 8.0 km away from the site.
- Mean annual rainfall of 639.0 mm from January to December at Badgerys Creek, NSW approximately 8.0 km away from the site.

5.6 Hydrogeology

Groundwater in the area occurs as an unconfined aquifer in fractures and joints of the shale (fracture rock aquifer). The 1:2 000 000 Department of Water Resources Groundwater in NSW, Assessment of Pollution Risk map indicates that the site is likely to be underlain by shales and that the potential for groundwater movement is likely to be low.

A search of Department Primary Industries - Office of Water records identified one groundwater well located within an approximate distance of 750 metres from the site, shown in Table 2.

Table 2: Groundwater Wells

Bore ID:	Bore Depth(m)	Latitude	Longitude
GW100571.1.1	271	-33.914377	150.81645

5.7 Acid Sulphate Soils

The Department for Infrastructure, Planning and Natural Resources (DIPNR) Acid Sulphate Soils Risk Mapping (1997) indicates that the Site is not expected to be underlain by acid sulphate soils.

5.8 Site History

5.8.1 Site Inspection

The aerial historical photographs and site walkover conducted 14 October 2021, indicated that the area of investigation has mainly been used for agricultural purposes /market garden since 1947. Aerial photography indicates adjacent south of the site has been used as residential / agricultural usage since 1947. Aerial photography indicates the site was also used for residential purposes, with a dwelling located along the southern boundary from 1947 until 1978 (latest 1984).

The site was covered with overgrown dry, dense grass. During site investigation it was determined that the site can be classified as vacant land. No stockpiles, storage sheds or vehicles were observed. The surrounding areas appear to have or are vacant land directly east of the site, as well as low-density residential and agricultural purposes. No signs of contamination, odours or “vegetation die-back” were observed at the time of the inspection.

5.8.2 Aerial Photograph Review

An aerial photograph search was conducted on the site and the local area. The aerial photos were viewed with observations presented in Table 3. Photographs are presented in Appendix B.

Table 3: Aerial Photograph Review

Year	Site Observations	Surrounding Area
1947	• Black and white photograph (poor quality) • Suspected structure located on the southern boundary • Suspected agricultural usage • Remaining site - vacant exposed ground surfaces	• Black and white photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Suspected agricultural residential located to the south
1965	• Black and white photograph • Dwelling located on the southern boundary • Suspected agricultural usage • Remaining site - vacant exposed ground surfaces Multiple trees located in north-western and western boundary	• Black and white photograph • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east and south
1975	• Black and white photograph • Dwelling located on the southern boundary • Suspected agricultural usage • Multiple trees located in north-western and western boundary Agricultural usage established	• Black and white photograph • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east and south; • Dwelling appears to have been demolished adjacent south
1978	• No change from previous photograph.	• No change from the previous photograph.
1984	• Black and white photograph (poor quality) • Black and white photograph • Dwelling located on the southern boundary had since been demolished • Suspected agricultural usage • Multiple trees located in north-western and western boundary	• Black and white photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Suspected agricultural residential located to the east and south; • Structure appears to have been demolished adjacent south
1986	• Colour photograph • Multiple trees located in north-western and western boundary • Agricultural usage	• Colour photograph • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east and south;
1991	• No change from previous photograph.	• No change from previous photograph.
1998	• Colour photograph • Multiple trees located in north-western and western boundary	• Colour photograph • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north

	• Signs of recent earthworks / land clearing for agricultural usage	• Signs of recent earthworks / land clearing for agricultural usage, adjacent south and east • Agricultural residential located to the east and south;
2000	• Colour photograph • Multiple trees located in north-western and western boundary • Agricultural usage	• Colour photograph • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east, north and south;
2004	• Colour photograph (poor quality) • Multiple trees located in north-western and western boundary • Agricultural usage	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east, north and south;
2005	• Colour photograph • Multiple trees located in north-western and western boundary • Agricultural usage	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east, north and south;
2007	• Colour photograph • Multiple trees located in north-western and western boundary • Vacant ground grassed exposed surfaces	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east, north and south; • Increase in residential development
2009	• No change from previous photograph	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east, north and south; • Increase in residential development
2011	• No change from previous photograph	• No change from previous photograph
2014	• No change from previous photograph.	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Construction earthworks located adjacent north • Agricultural residential located to the east, north and south; • Increase in residential development
2015	• No change from previous photograph.	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • School premises located adjacent north • Agricultural residential located to the east, north and south; • Increase in residential development
2016	• No change from previous photograph.	• No change from previous photograph.

2018	• No change from previous photograph.	• No change from previous photograph
2019	• No change from previous photograph.	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • School premises located adjacent north • Agricultural residential located to the east, north and south; • Residential development located to the east
2020	• No change from previous photograph.	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • School premises located adjacent north • Agricultural residential located to the east, north and south; • Ongoing residential development located to the east
2021	• No change to previous photograph	• No change to previous photograph

5.8.3 NSW OEH Records

The site or nearby surrounding areas within 1 km, have no notices under the Contaminated Land Management Act (1997) or the Environmentally Hazardous Chemicals Act (1985). No sites were identified in the Sites List of NSW Contaminated Notified to the EPA as of 29 August 2022.

5.9 Summary of Site History

Based on the historical review, background review and site inspection, the site was used for agricultural activities from as early as 1947. Small dwelling / structure was situated on the southern boundary, until it was demolished 1978 – 1984 (latest). The site since 1985 has been primarily used as a market garden until 2005. From 2009 to the present date, the site appeared to be vacant land, as was observed during site inspection.

5.10 Planning Certificate

Planning Certificate Under Section 10.7 (Certificate No: 537) for the site was sourced from Liverpool City Council on 28 July 2021. The certificate is presented in Appendix C. The Planning Certificate, which is applicable to Lot 12 DP 1103748, indicates that there are no matters arising under Section 59(2) of the Contaminated Land Management Act 1997 (Act), as follows:

- The land is NOT significantly contaminated land (or part of the land) within the meaning of the Act at the date when the certificates were issued.
- The land is NOT the subject to a management order within the meaning of the Act at the date when the certificates were issued.

- The land is NOT the subject of an approval voluntary management proposal within the meaning of the Act at the date when the certificates were issued.
- The land is NOT the subject of an ongoing maintenance order within the meaning of the Act at the date when the certificates were issued.
- The land is NOT the subject of a site audit statement within the meaning of the Act at the date when the certificates were issued.

5.11 Historical Land Titles Search

A search for the Historical Land Titles was not conducted as a review of the site aerial photographs, in conjunction with an interview with the current owner, indicates the site has not been used for anything other than vacant land, market garden, and possible residential living purposes.

6. CONCEPTUAL SITE MODEL

6.1 Areas of Environmental Concern

Our assessment of site AECs and COPCs (Table 5) is made based on available site history, aerial photograph interpretation and site walkovers.

Table 5: Areas of Environmental Concern and Contaminants of Primary Concern (COPC)

AEC	Potential for Contamination	COPC	Contamination Likelihood
A – Market Gardens	Pesticides and heavy metals may have been used during development of market gardens.	HM and OCP/OPP	Medium - High
B – Areas of Dwellings/Sheds	Heavy metals may have been used underneath dwellings. Sheds or areas surrounding sheds may have been used as fuel storage, oil or drums of unknown content; asbestos sheeting, may include lead-based paints.	HM, OCP/OPP, and Asbestos	Medium-High

6.2 Potential Receptors and Sensitive Environments

The residents and visitors/workers on site are identified as immediately sensitive environmental receptors. A summary of the identified potential receptors and sensitive environments is detailed below in Table 6.

Table 6: Potential Receptors and Sensitive Environments

Receptors/Environments	Potential Pathway
Human Receptors: • Future site workers and visitors • Site labourers/workers • Residents of adjacent properties • Trespassers	• Direct skin contact • Ingestion of contaminated soil
Sensitive Environments: • Kemps Creek Tributaries	• Migration via stormwater run-off or within groundwater • Migration into underlying soil

Given the heavily modified nature of the site and surrounding land, flora and fauna receptors are not considered to be sensitive.

Given the lack of extractive bores in the area and expected deep clays over shale, groundwater is not considered a significant receptor.

6.3 Potential for Migration and Exposure of Contamination

Site history information and onsite inspection observations indicated a potential for contaminants to present a direct contact and inhalation exposure risk on site. Exposure routes of contaminants could potentially be through direct contact with exposed soils (Heavy Metals, OCP/OPP and Asbestos). These exposure risks are "likely" to pose high risks to receptors and environments during any demolition, earthworks, or construction phases within the site.

There is a potential for these contaminates to be present within underlying soils with the ability for such contaminates to migrate horizontally through stormwater runoff pathways from the proposed development.

6.4 Assessment of Preliminary Site Investigation and Recommendations

Based on the historical review, background review and site inspection, the site was used for agricultural activities from as early as 1947. Small dwelling / structure was situated on the southern boundary, until it was demolished 1978 – 1984 (latest). The site since 1985 has been primarily used as a market garden until 2005. From 2009 to the present date, the site appeared to be vacant land, as was observed during site inspection. Footprint of the former dwelling onsite is illustrated in Figure 1.

Based on the site's history and walkthrough, the site is considered to have the following environmental concerns of:

- Areas of possible cropping/farming activity may have introduced heavy metals and pesticides into the soil.
- Areas of a previous dwellings/shed, may have introduced hazardous building materials and other contamination, such as OCP/OPP, lead based paints and asbestos.

To address identified AECs, intrusive soil/water sampling regime is recommended to determine what, if any, remediation is required to render the site fit for residential land use. A limited soil sampling plan is to be developed based on a judgemental or systematic sampling pattern and risk-based assessment.

Assessment shall address each of the identified AECs and assess COPC identified for each AEC (Table 3). Results of the site testing shall be assessed against Site Acceptance Criteria (SAC) with reference to *ASC NEPM (1999, amended 2013).*

7. SAMPLING AND ANALYSIS QUALITY PLAN (SAQP)

The SAQP followed the seven step Data Quality Objective (DQO) process. The Data Quality Objective (DQO) process was applied to the investigation to ensure that all data collection activities were appropriate and achieved the project objectives. The DQO process consists of seven (7) steps, outlined below, which define the type, quality, and quantity of data needed to support decisions relating to the environmental condition of a site.

7.1 Step 1: State the Problem

The 'problem' as it stands, is that an intrusive investigation is required to address the data gaps and to assess the condition of AECs. The purpose of this investigation is to determine the suitability of the site based on the field and analytical data collected.

7.2 Step 2: Identify the Decision

Based on the objectives outlined in **Section 3**, it will be necessary to consider the following questions:

- Has the nature, extent and source of soil impacts been defined?
- Where contaminants are present, do the concentrations have the potential to adversely impact on human health or the environment?
- Does the collected data provide sufficient information to allow the selection and design of an appropriate remedial strategy, if necessary?

7.3 Step 3: Identify Inputs to the Decision

Key data required for the decision-making process includes:

- Qualitative site information presented in the site overview;
- National and State guidelines endorsed under the *NSW Contaminated Land Management Act 1997*;
- Visual assessment of the site and material condition;
- Intrusive investigation;
- Identification of potential receptors, both on and off site;
- The assessment of exposure pathways including conceptual fate and transport modelling of potential contaminants;
- Laboratory analysis of potential soil contaminants including:

- Heavy Metals (Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc),
- Organochlorine Pesticides (OCP), and
- Organophosphorus Pesticides (OPP),

- Comparison of the results of the laboratory analysis to the applicable guidelines to evaluate the suitability of the site for the proposed use.

7.4 Step 4: Define the Study Boundaries

The boundaries of the study area are within the allotment cadastral site boundaries (refer to **Figure 1**). The vertical extent of the assessment is limited to surface soils to a maximum depth of 0.2 m bgl where natural soils were encountered. The study is temporally limited to the days of the sampling, that is, 14 October 2021 and the 24 February 2022.

7.5 Step 5: Develop a Decision Rule

The assessment includes a comparison of individual sample results to the generic and site-specific criteria detailed within *Schedule B (1) Guideline on Investigation Levels for Soil and Groundwater* of the *National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPM) (Amended 2013),* published by the National Environment Protection Council (NEPC). The assessment criteria are outlined and justified in Section 10.

The decision rules can be defined as: -

- If the laboratory quality assurance/ quality control data are within the acceptable ranges, the data will be considered suitable for use;
- If the COPCs are reported above the adopted criteria and/or at elevated levels (where no criteria are available) then it will be considered whether further assessment, remediation and/or management measures are required; and
- Where concentrations are below the assessment criteria, then no further assessment, remediation and/or management of that contaminant, in that area, in that media, is required. This is provided samples have been collected at the required frequencies (as per NSW EPA guidelines) and adequately represent the conditions on site, if not, additional sampling may be required.

7.6 Step 6: Specify Limits on Decision Errors

Two types of decision errors may occur due to uncertainties or limitations in the project data set:

- A site is deemed uncontaminated when, in fact, it is contaminated; and

- A site is deemed contaminated when, in fact, it is uncontaminated.

The consequences for incorrectly assessing a site as posing an unacceptable risk are considered less significant than the consequences for incorrectly assessing a site as posing acceptable risk.

Factors that may contribute to one of the above decision errors include:

- Sampling error – the sampling program does not adequately detect the variability of a contaminant from point to point across the site. That is, the samples collected are not representative of the site conditions; and
- Measurement error – may occur through the sample collection, handling, preparation, analysis, and data reduction processes.

The combination of the above errors is known as 'total study error' and is minimised through the correct choice of sampling design and measurement systems.

Geotesta will mitigate the risk of decision error by:

- Assignment of fieldwork tasks to suitably trained consulting staff, and experienced contractors;
- Assignment of laboratory analytical tasks to reputable NATA accredited laboratories; and
- Assignment of data interpretation tasks to suitably trained Geotesta consulting staff, and outsourcing to technical experts where required.

A range of data quality indicators (DQI) have been adopted to facilitate the assessment of the completeness, comparability, representativeness, precision and accuracy, shown in Table 4.

Table 4. Data Quality Indicators (DQI)

DQI	Consideration		Compliance
Completeness[1]	Field	All critical locations sampled	A total of twenty (20) primary soil samples were collected via auger drilling from twenty (20) locations within the site.
		All samples collected (from grid and at depth)	All samples were collected in accordance with the limited sampling plan
		SOPs appropriate and complied with	All samples were collected in accordance with relevant guidelines, industry practices, and Australian Standards
		Experienced sampler	Samples were recovered by a suitably qualified and experienced sampler
		Documentation correct	All required documentation was completed including written site records and photographic logs
	Laboratory	All critical samples analysed according to SAQP	All of the recovered samples were analysed by a NATA accredited laboratory
		All analytes analysed according to SAQP	Each recovered sample was analysed for the analytes required by the SAQP in accordance with the context for which the sample was recovered
		Appropriate methods and LORs	Eurofins is a suitably qualified NATA accredited laboratory, therefore the appropriate methods and LORs were adopted for the testing, as outlined within the analytical reports
		Sample documentation complete	Appropriate chain of custody documentation was completed. A sample receipt was provided detailing the condition of the samples upon receipt
		Sample holding times complied with	All samples were analysed within the appropriate holding times as detailed in *NEPM 2013*
Comparability[2]	Field	Same SOPs used on each occasion	Each sample was recovered in accordance with the SOPs
		Experienced sampler	Samples were recovered by two suitably qualified and experienced samplers
		Climatic conditions	Samples stored in insulated containers with ice bricks. Climatic conditions were ideal on the day of sampling
		Same types of samples collected	The type of samples collected was consistent

DQI	Consideration		Compliance
	Laboratory	Sample analytical methods used	Eurofins is a suitably qualified NATA accredited laboratory, therefore the appropriate methods were adopted for the testing, as outlined within the analytical reports
		Sample LORs	Eurofins is a suitably qualified NATA accredited laboratory, therefore the appropriate LORs were adopted for the testing, as outlined within the analytical reports
		Same laboratories	Eurofins conducted all of the analytical testing of primary samples
		Same units	The same units were used for the respective analytes
Representativeness[3]	Field	Appropriate media sampled according to SAQP	All samples were recovered in accordance with the SAQP
		All media identified in SAQP	The investigation was limited to the analysis of the soil
	Laboratory	All samples analysed according to SAQP	Eurofins is a suitably qualified NATA accredited laboratory, therefore all samples were analysed in accordance with the appropriate requirements
Precision[4]	Field	SOPs appropriate and complied with	All samples were recovered in accordance with the SOPs
	Laboratory	Laboratory and inter-laboratory duplicates	Laboratory and inter-laboratory duplicates are analysed as a component of the standard operating procedures of Eurofins in accordance with the conditions of their NATA accreditation
		Field duplicates	Field duplicate samples were to be recovered at a rate of 5% and labelled with sample IDs not known to the laboratories and were analysed along with the primary samples by Eurofins as detailed within Section 8.
Accuracy[5]	Field	SOPs appropriate and complied with	All samples were recovered in accordance with the SOPs
	Laboratory	Analysis of field blanks, rinsate blanks, reagent blanks, method blanks, matrix spikes, matrix spike duplicates, surrogate spikes, reference materials, laboratory control samples, and laboratory-prepared spikes	Laboratory quality assurance and quality control samples were incorporated in this investigation by Eurofins as summarised in Section 9.6.

Notes: SOP = Standard Operating Procedures; SAQP = Sampling, Analysis and Quality Plan; LOR = Limit of Reporting

1. *A measure of the amount of useable data (expressed as %) from a data collection activity.*
2. *The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event.*
3. *The confidence (expressed qualitatively) that data are representative of each media present on the site.*
4. *A quantitative measure of the variability (or reproducibility) of data.*
5. *A quantitative measure of the closeness of reported data to the true value.*

7.7 Step 7: Optimise the Design

In order to optimise the design, a sampling program was developed in accordance with the NSW EPA (1995) *Contaminated Sites: Sampling Design Guidelines*. Quality assurance and quality control procedures were implemented as outlined within **Section 9**.

8. SAMPLING PROGRAM

8.1 Field Investigation

Fieldwork for this investigation was carried out on 14 October 2021 and included drilling of twenty (20) boreholes. Boreholes were advanced by both hand auger and a vehicle-mounted auger to a maximum depth of 0.2 m below ground level (bgl). The sampling locations are presented in Figure 2. Environmental soil samples were collected from the auger and held for selected analysis.

A follow up site visit was conducted on 24 February 2022, for the determination of site-specific Ecological Investigation Levels (EILs). A sample's soil properties were measured for the site-specific derivation of ACLs for Cr(III), Cu, Ni and Zn. Soil properties include:

- pH, Cation Exchange Capacity (CEC) and % Clay.

EIL background (ABC) levels were obtained from the average of the laboratory results of background samples.

8.2 Sampling Program

The sampling locations are illustrated in Figures 2 (Appendix A) for the site, respectively. Soil samples were collected to a maximum depth of 0.15 m (bgl). Standard procedures were used for sampling and soil sampling methodology was completed to meet data quality objectives. Standard procedures (sampling directly from the retracted auger) described in Section 9 below were used for sampling and soil sampling methodology was completed to meet data quality objectives.

8.3 Rationale for Sampling Program and Location

Samples numbers are not in accordance with superseded *NSW EPA Sampling Guidelines (1995*), given the PSI was conducted with a limited sampling program, the sampling point regime does not meet Sampling Design requirements but based on use of entire site was used for market gardening, with a former structure in the southern section of the site, the sampling point numbers are sufficient for this investigation.

The justification of the sampling point regime for the assessment was based on the investigator's knowledge, operational requirements, experience, history of the Site, and the requirements in the *Department of Environment and Conservation (NSW) "Guidelines for Assessing Former Orchards and Market Gardens".* All historical investigations and anecdotal evidence supported the sampling approach adopted and provided for samples to be collected in a manner that ensured an unbiased statistical. All the AECs were based on the

extensive market garden history and site observations involved the investigation of heavy metals and OCP/OPP as primary targets.

8.4 Analytical Program

Samples were to be analysed to provide information for the characterisation of the most likely contaminated soils. This allowed the assessment of soils samples against the Site Acceptance Criteria. All analyses were to be carried out by NATA certified laboratory Eurofins MGT in accordance with Chain of Custody (CoC) instructions supplied by Geotesta. The samples were checked for heavy metals and OCP/OPP. Summary of the soil laboratory analyses is presented in Table 7. The details of sample types and depths are provided in Table 8.

Table 7: Summary of soil laboratory program

COC	Number of samples analysed
Heavy Metals[2]	20
Suite B14[3]	20

Notes:

[1]Heavy metals: **Arsenic, cadmium, Chromium, copper, lead, Mercury, Nickel, Zinc**

[2]Suite B14: **OCP and OPP**

Table 8: Samples Depth and Requested Lab Tests

Sample ID (BH)	Depth (m)	Sample Type	HM[1]	Suite B14[2]
Di1	0.15	Silty Clay	✗	✗
Di2	0.15	Silty Clay	✗	✗
Di3	0.15	Silty Clay	✗	✗
Di4	0.15	Silty Clay	✗	✗
Di5	0.15	Topsoil	✗	✗
Di6	0.15	Silty Clay	✗	✗
Di7	0.15	Silty Clay	✗	✗
Di8	0.15	Silty Clay	✗	✗
Di9	0.15	Silty Clay	✗	✗
Di10	0.10	Topsoil	✗	✗
Di11	0.15	Topsoil	✗	✗
Di12	0.15	Silty Clay	✗	✗
Di13	0.15	Silty Clay	✗	✗
Di14	0.10	Topsoil	✗	✗
Di15	0.15	Topsoil	✗	✗
Di16	0.15	Silty Clay	✗	✗
Di17	0.15	Topsoil	✗	✗
Di18	0.15	Silty Clay	✗	✗
Di19	0.15	Silty Clay	✗	✗
Di20	0.15	Topsoil	✗	✗

[1]HM: Heavy metal
[2]Suite B14: OCP, OPP

8.5 Visual Inspection

During the sampling works for the site contamination investigation, a visual inspection was conducted to ensure no signs of contamination were visible, or odours encountered within the ground surfaces. Due to extensive grass cover an inspections for ACM could not be conducted effectively, Geotesta recommends the requirement for an Unexpected Finds Protocol (UFP) when the site is cleared.

8.6 Soil Logging

Boreholes were logged by an experienced environmental/geotechnical engineer in accordance with Standard procedures. The boreholes logs are attached to this report in Appendix D.

9. SAMPLING QUALITY ASSURANCE AND QUALITY CONTROL

9.1 Sampling Procedures

General soil sampling procedures included wearing of plastic disposable gloves when handling sampling equipment and soil and changed between collections of samples. All sampling equipment was clean prior to commencement of sampling. Equipment for soil sampling included a vehicle-mounted auger and a stainless-steel sampling shovel. All equipment was decontaminated between samplings. The following measures have been utilized during the sampling to achieve the sampling quality controls.

9.2 Sample Containers

Soil samples collected during the investigation were placed immediately into laboratory prepared glass jars with Teflon lids and plastic bags. Standard identification labels were adhered to each individual container and labelled according to depth, date, sampling team

9.3 Sample Tracking and Identification

All samples were identified with a unique sample number and all sampling details were included on the sample label and were reproduced on the field sample log and chain of custody records. Samples were received at the laboratory in accordance with NEPM requirements. Refer to Appendix E for the Sample Receipt Advice.

9.4 Decontamination

All equipment used in the sampling program, which included a handheld auger and a stainless-steel sampling shovel were decontaminated prior to use and between samples to prevent cross contamination. Decontamination of equipment involved the following procedures:

- Cleaning equipment in potable water to remove gross contamination;

- Cleaning in a solution of Decon-90TM;

- Rinsing in clean demineralised water then wiping with clean lint free cloths.

9.5 Sample Transport

All samples were packed in ice from the time of collection and were transported under chain of custody from the Site to Eurofins MGT Services in Lane Cove. During the project, the laboratory reported that all the samples arrived intact, with appropriate preservation medium and were analysed within their relative holding times for the respective analytes.

9.6 Analytical QA/QC Procedures

Quality control is achieved by utilising NATA accredited laboratories, using standard methods supported by internal duplicates, checking of high, abnormal, or otherwise anomalous results against background and other chemical results for the sample concerned.

Quality assurance is achieved by confirming field or anticipated results based upon the comparison of field observations with laboratory results. Two duplicate samples (D1 & D2) were taken for one (1) day of sampling and were duplicate samples of parent samples Di1 and Di20, respectively.

A Field Blank was taken as part of the Quality assurance to ensure no cross-contamination has taken place.

In addition, the laboratory undertakes additional duplicate analysis as part of their internal quality assurance program. Chain of Custody documentations were used to ensure that sample tracking and custody can be cross-checked at any point in the transfer of samples from the field to hand-over to the laboratory.

10. ASSESSMENT CRITERIA

The respective soil Site Assessment Criteria (SAC) for the project are provided in the following sections. The *National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), NEPC 2013,* Canberra (referred to as ASC NEPM 2013) was used to determine the SAC.

10.1 Heavy metals and OCP/OPP

Table 9 presents HILs for heavy metals and pesticides (OCP/OPP). It is obtained from Tables 1A(1) in *Schedule B1 of NEPM (2013)* for Residential A.

Table 9: Site Assessment Criteria for Soils (mg/kg)

Analytes	HILs-Residential A[1]
Arsenic	100
Cadmium	20
Chromium (VI)	100
Copper	6000
Lead	300
Mercury (inorganic)	40
Nickel	400
Zinc	7400
Pesticides:	
Aldrin/Dieldrin	6
Chlordane	50
DDT+DDE+DDD	240
Chlorpyrifos	160
Endosulfan[5]	270
Endrin	10
Heptachlor	6
HCB	10
Methoxychlor	300
Toxaphene	20

1- Criteria adopted for residential areas of the Site

10.2 Ecological Investigation Levels

Ecological Investigation Levels (EILs) were also used to assess the site to confirm suitability for the proposed residential land use.

The current version of the NEPM (2013) specifies default EILs for arsenic, lead, DDT and naphthalene.

NEPM (2013) specifies a methodology for the derivation of site-specific EILs for nickel, chromium III, copper and zinc. The derivation process requires determination of ambient background concentrations (ABC) and added contaminant limits (ACLs) for these chemicals, and the EIL is then calculated as the ABC plus the ACL.

Sample# EIL2 soil properties were measured for site-specific derivation of ACLs for Cr(III), Cu, Ni and Zn. Soil properties include:

- pH, Cation Exchange Capacity (CEC) and % Clay.

Table 10 presents EILs derived from the measured soil properties in sample# HIL2 for aged soils in Urban Residential/Public Open Space, utilising ABC levels derived from the average laboratory results of samples# HIL1 and HIL2.

Table 10: NEPM (2013) EILs for Urban Residential and Public Open Spaces

Analyte	pH	CEC^	Clay Content*	ABC	ACL	EIL
Zinc	6.6	8.7	-	87	400	487
Copper	6.6	8.7	-	21	235	256
Chromium (III)	-	-	13 %	18	400	418
Nickel	-	8.7	-	11	170	181
Lead	-	-	-	26	1100	1,126
Arsenic	-	-	-	-	-	100
DDT	-	-	-	-	-	180
Naphthalene	-	-	-	-	-	170

Note(s):

1. ABC = ambient background concentrations, ACL = added contaminant limits, ESL = ecological screening levels, CEC = cation exchange capacity;

11. RESULTS

11.1 Subsurface Conditions

A summary of sub-surface soil conditions encountered in the site is presented below:

Based on the fieldwork results, an approximately 0.1 m–0.2 m topsoil layer was observed in all boreholes.

The material below the topsoil material was firm to stiff Silty CLAY. It was found between 0.1 m and up to 0.9 m in depth during the geotechnical engineering site investigation.

Bedrock was encountered in borehole (Di1) at depths varying between 0.9 m – 2.5 m and comprised an extremely to highly weathered and very low strength shale. The bed rock encountered in the Borehole# Di1 was drilled for the geotechnical investigation.

Groundwater was not encountered within any boreholes.

11.2 Laboratory Analytical Results

Selected soil samples were analysed for the COPCs. A summary of analytical results follows. The lab test reports are presented in Appendix E.

11.2.1 Heavy Metals (HM)

A total of twenty (20) soil samples were analysed for heavy metals. The results of the laboratory results for the heavy metal components are presented in Table 11. The 95% UCL was calculated as a statistical analysis of the heavy metal detections including minimum, maximum and average along with the adopted SAC, and is shown in Table 12.

Table 11: Heavy Metal Detections in soil samples (mg/kg)

	Sample Depth (m)	Arsenic (As)	Cadmium (Cd)	Chromium (total) (Cr)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Zinc (Zn)
Di1	0.15	**17**	< 0.4	**26**	**44**	**33**	< 0.1	**11**	**62**
Di2	0.15	**12**	< 0.4	**26**	**45**	**26**	< 0.1	**8.7**	**48**
Di3	0.15	**14**	< 0.4	**36**	**44**	**30**	< 0.1	**11**	**63**
Di4	0.15	**8.8**	< 0.4	**25**	**46**	**24**	< 0.1	**11**	**56**
Di5	0.15	**16**	< 0.4	**28**	**39**	**29**	< 0.1	**8.8**	**54**
Di6	0.15	**13**	< 0.4	**25**	**63**	**27**	< 0.1	**8.5**	**48**
Di7	0.15	**16**	< 0.4	**29**	**43**	**36**	< 0.1	**11**	**80**
Di8	0.15	**11**	< 0.4	**28**	**43**	**25**	< 0.1	**11**	**56**
Di9	0.15	**12**	< 0.4	**26**	**33**	**21**	< 0.1	**10**	**52**
Di10	0.10	**13**	< 0.4	**25**	**55**	**25**	< 0.1	**9.7**	**75**
Di11	0.15	**11**	< 0.4	**27**	**38**	**23**	< 0.1	**9.9**	**52**
Di12	0.15	**7.3**	< 0.4	**44**	**43**	**20**	< 0.1	**27**	**75**
Di13	0.15	**15**	< 0.4	**26**	**42**	**26**	< 0.1	**10**	**61**
Di14	0.10	**12**	< 0.4	**26**	**52**	**29**	< 0.1	**10**	**97**
Di15	0.15	**24**	< 0.4	**24**	**54**	**45**	< 0.1	**14**	**140**
Di16	0.15	**11**	< 0.4	**33**	**41**	**36**	< 0.1	**11**	**84**
Di17	0.15	**16**	< 0.4	**27**	**45**	**23**	< 0.1	**13**	**59**
Di18	0.15	**20**	< 0.4	**25**	**47**	**53**	< 0.1	**13**	**170**
Di19	0.15	**7.9**	< 0.4	**18**	**61**	**28**	< 0.1	**10**	**110**
Di20	0.15	**8.5**	< 0.4	**22**	**100**	**23**	< 0.1	**11**	**99**

Note- Chromium is total chromium and includes trivalent and hexavalent chromium.

Table 12: Statistical analysis of Heavy Metal Detections in Soil samples (mg/kg)

	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn
Samples count[1]	20	20	20	20	20	20	20	20
Minimum	7.3	-[3]	18	33	20	-[3]	8.5	48
Maximum	**24**	-[3]	**44**	**100**	**53**	-[3]	**27**	**170**
Average	13.3	-[3]	27.3	48.9	29.1	-[3]	11.5	77.1
Standard Deviation[2]	5.02	-[3]	2.07	21.13	7.90	-[3]	1.90	31.99
95% Confidence Level[2]	4.65	-[3]	1.91	19.54	7.31	-[3]	1.76	29.58
NEPM 2013 HIL	**100**	**20**	**100**	**6,000**	**300**	**40**	**400**	**7,400**
NEPM 2013 EIL	**100**	**--**	**418**	**256**	**1,126**	**--**	**181**	**487**
No. of HIL Exceedance	0	0	0	0	0	0	0	0

[1] Note: The higher concentration within the Parent / Duplicate pair was adopted within the results table

[2] Note: 95% Confidence Level calculated within the Topsoil Horizon

[3] - Insufficient data points

All detected concentrations of heavy metals were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC) – Health Investigation Levels (HIL A) and Ecological Investigation Levels (EIL).

11.2.2 Organochlorine Pesticides / Organophosphorus Pesticides (OCP/OPP)

A total of twenty (20) samples were analysed for a range of Organochlorine and Organophosphorus pesticides. Tables 13 and 14 presents the OCP/OPP results.

Table 13: OCP/OPP (Pesticides) Detections in soil samples (mg/kg)

	Sample Depth (m)	DDT+DDE+ DDD	Aldrin and Dieldrin	Endrin	Chlordane Total	Toxaphene	Chlorpyrifos
Di1	0.15	**0.06**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di2	0.15	**0.17**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di3	0.15	< 0.4	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di4	0.15	**0.14**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di5	0.15	**0.12**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di6	0.15	**0.41**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di7	0.15	**0.27**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di8	0.15	**0.25**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di9	0.15	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di10	0.10	**0.15**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di11	0.15	**0.24**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di12	0.15	**0.27**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di13	0.15	**0.06**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di14	0.10	**0.05**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di15	0.15	**0.35**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di16	0.15	**0.24**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di17	0.15	< 0.1	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di18	0.15	**0.48**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di19	0.15	**0.09**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di20	0.15	**0.13**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
NEPM 2013 HIL		**240**	**6**	**10**	**50**	**20**	**160**
No. of HIL Exceedance		0	0	0	0	0	0

Table 14: OCP (Pesticides) Detections in soil samples (mg/kg)

	Sample Depth (m)	Endosulfan[1]	HCB	Heptachlor	Methoxychlor
Di1	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di2	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di3	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di4	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di5	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di6	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di7	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di8	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di9	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di10	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di11	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di12	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di13	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di14	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di15	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di16	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di17	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di18	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di19	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di20	0.15	< 0.15	< 0.05	< 0.05	< 0.05
NEPM 2013 HIL		**270**	**10**	**6**	**300**
No. of HIL Exceedance		0	0	0	0

Sum of Endosulfan I, Endosulfan II and Endosulfan sulphate

All detected concentrations of OCP/OPP were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC).

11.2.3 Asbestos

Due to extensive grass cover, an inspection for ACM could not be conducted effectively, Geotesta recommends the requirement for an Unexpected Finds Protocol (UFP) when the site is cleared.

11.3 Evaluation Analytical Quality Assurance

11.3.1 Duplicate Samples

Two (2) duplicate samples were recovered to analyse the precision and reproducibility of the conducted analysis. The duplicate samples were labelled with an identification number not known to the laboratory and analysed in the same way as the primary samples. The duplicate sample is analysed by calculating the relative percentage difference (RPD) of the laboratory results for the duplicate and corresponding primary sample. The RPD is a method of normalising two values and allows a comparison between values.

An acceptable RPD of 30% was adopted for this assessment, however, in circumstances where one or both detected concentrations within the duplicate pair were within five (5) times the LOR, an RPD of 100% was considered acceptable.

Upon analysis, the following RPD was in excess of the acceptance criteria (refer to Tables 15 and 16):

- Copper within samples# Di20 and D2 – (RPD of 43.9 % > 30%);

In regard to these RPD exceedances, variations between primary and duplicate samples are expected due to the heterogeneous nature of the soils. As a conservative measure, the higher concentration was adopted as the guiding value in order to minimise the potential to underestimate the level of contamination present. All adopted contaminant concentrations were < HIL/ESL A.

Table 15. Relative Percentage Difference against Di1 and D1

Analyte	LOR	Concentrations		RPD (%)
		Di1	D1	
Arsenic	2	**17**	**17**	**0.0**
Cadmium	0.4	<0.4	<0.4	-
Chromium	5	**26**	**26**	**0.0**
Copper	5	**42**	**44**	**4.7**
Lead	5	**33**	**32**	**3.1**
Mercury	0.1	<0.1	<0.1	-
Nickel	5	**11**	**11**	**0.0**
Zinc	5	**56**	**62**	**10.2**

*Adapted from Eurofins Analytical Report **832883-S (Appendix E)***

Notes: LOR = Limit of Reporting; Asbestos measurement = Detected (D) / not detected (ND). All other analytes measured as mg/kg. *Shaded = RPD exceedance where concentrations are greater than 30%, in circumstances where one or both of the detected concentrations within the duplicate pair were within five (5) times the LOR, an RPD of 100% was considered acceptable.*

Table 16. Relative Percentage Difference against Di20 and D2

Analyte	LOR	Concentrations		RPD (%)
		Di20	D2	
Arsenic	2	**8.5**	**8.4**	**1.2**
Cadmium	0.4	<0.4	<0.4	-
Chromium	5	**19**	**22**	**14.6**
Copper	5	**100**	**64**	**43.9**
Lead	5	**23**	**23**	**0.0**
Mercury	0.1	<0.1	<0.1	-
Nickel	5	**11**	**10**	**9.5**
Zinc	5	**95**	**99**	**4.1**

*Adapted from Eurofins Analytical Report **832883-S (Appendix E)***

Notes: LOR = Limit of Reporting; Asbestos measurement = Detected (D) / not detected (ND). All other analytes measured as mg/kg. *Shaded = RPD exceedance where concentrations are greater than 30%, in circumstances where one or both of the detected concentrations within the duplicate pair were within five (5) times the LOR, an RPD of 100% was considered acceptable.*

The RPD for the duplicate samples analysed by the primary laboratory (Eurofins MGT) were between 0.0 % and 43.9 %, with only one (1) exceedance for copper within samples# Di20 / D2. RPD values could not be determined for Cadmium and Mercury as they were below the laboratory reporting limits. Based on the laboratory QA/QC and the duplicate results the data is considered suitable for use in this environmental assessment of the site.

The internal laboratory QA/QC results which are presented in the laboratory certificates are considered acceptable based on the duplicate and control samples analysed. The overall results suggest that the laboratory analysis carried out is reliable for this assessment.

11.3.2 Field Blank

The field blank sample assesses the potential for the primary sample to be affected by external and environmental factors during transport between the site and laboratory. The field blank sample consists of blank water which is transported to and from the site and laboratory with the primary samples.

Upon analysis of the field blank sample, no concentrations of BTEX or heavy metals were detected above the Limit of Reporting (LOR). As such, there is a minimal potential for cross-contamination to have occurred during the field and trip handling procedures. Refer to Tables 17 and 18.

Table 17. Field Blank Results (mg/L)

Sample	C6-C10	C10-C16	C16-C34	C34-C40
FB1	<0.02	<0.05	<0.1	<0.1
No Detection above LOR				

*Adapted from Eurofins Analytical Report **832883-W (Appendix E)***

Table 18. Field Blank Results (mg/L)

Sample	Arsenic (As)	Cadmium (Cd)	Chromium (Total) (Cr)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Zinc (Zn)
FB1	< 0.001	< 0.0002	< 0.001	< 0.001	<0.001	<0.0001	<0.001	<0.005

*Adapted from Eurofins Analytical Report **832883-W (Appendix E)***

11.3.3 Laboratory QAQC

The laboratory internal QA/QC Reports provided in Appendix E indicated that the appropriate laboratory QA / QC procedures and rates were undertaken for contamination studies, and that:

- Laboratory blank samples were free of contamination;
- Matrix spike recoveries were within the control limits;
- Laboratory duplicate RPDs exceeded the control limits for OCPs/OPP, Eurofins quoted laboratory code Q15[1]; and
- Surrogates and laboratory control samples were within the laboratories acceptable range.

[1] Q15: The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

11.3.4 Conceptual Site Model

Based on the results of the Preliminary Site Investigation, including sampling and analysis results, carried out on the site, the Conceptual Site Model (CSM) has been updated and presented in Table 19.

Table 19 – Updated Conceptual Site Model Post Assessment

AEC	COPC	Likelihood of Contamination	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential mechanisms of exposure	Sampling Completed	Potential & Complete Exposure Pathways
A – Market Garden, Orchards & Agricultural Grazing • Market gardens and orchards used for agricultural purposes may involve fertiliser use, chemical pesticides and herbicide use that may introduce heavy metals, pesticide chemicals into the soil and surface water.	HM and OCP/OPP	Medium-High	• Spraying of pesticides	• Surface soils • Surface water • Aesthetics • Groundwater	• Future site workers and visitors • Site labourers/workers • Residents of adjacent properties • Trespassers	• Direct dermal contact with contaminated soil and/or surface water • Ingestion of contaminated soil • Inhalation of contaminated soil (as dust) • Leaching of soil contaminants to surface water and/or groundwater	Di1 to Di20	• No contamination identified above the SAC was identified in the soil samples in the agricultural usage land, therefore the risk is acceptable for the current and future site users, future construction workers, and soil biota/plants and transitory wildlife. • Contaminant concentrations of concern were below the SAC, therefore the risk is acceptable for the exposure pathway for surface water and groundwater.

12. DISCUSSION

Soil Contamination Summary

Based on the historical review, background review and site inspection, the site was used for agricultural activities from as early as 1947. Small dwelling / structure was situated on the southern boundary, until it was demolished 1978 – 1984 (latest). The site since 1985 has been primarily used as a market garden until 2005. From 2009 to the present date, the site appeared to be vacant land, as was observed during site inspection.

During the onsite investigation, the site was vacant land with extensive vegetation (grass) coverage that had been unkept, the former market garden posed the potential concern of contamination from heavy metals, OCP/OPP and asbestos.

A summary of the laboratory result is presented as the following:

- All detected concentrations of heavy metals were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC) – Health Investigation Levels (HIL A) and Ecological Investigation Levels (EIL).
- All detected concentrations of OCP/OPP were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC).

13. CONCLUSIONS AND RECOMMENDATIONS

A Preliminary Site Investigation of 495 Fourth Avenue, Austral NSW 2179 was undertaken by Geotesta to investigate the likelihood of the presence and extent of contamination on the site.

Based on the assessment undertaken, the following conclusions and recommendations can be made:

- All the contaminant concentrations of interest that were analysed were found to be within the site assessment criteria (SAC).
- The conducted Preliminary Site Investigation's limited soil sampling and analysis program indicated a **low** risk of soil and groundwater contamination. It is the opinion of Geotesta Pty Ltd that the site is suitable for the proposed low density residential development pending the results of an additional Data Gap Contamination Assessment.

  - Due to the existence of a data-gap in this investigation, a further Data Gap Assessment in the vicinity of the footprint of the former structure/dwelling located on the southern boundary is required to address the potential area of concern identified in the AECs by determining the existence of any asbestos contamination. The Data Gap Assessment findings will be issued as an Addendum Letter to this report.

DOCUMENT CONTROL

Date	Version	Report Prepared By:	Report Reviewed and issued by:
22 November 2021	Rev (1)	**Alex Gibson** BSc (Hons) MSc MIEAust Environmental Engineer	**Dr. Mohammad Hossein Bazyar** BEng MEng Ph.D MIEAust CPEng NER Senior Environmental Consultant
08 December 2021	Rev (2)	**Alex Gibson** BSc (Hons) MSc MIEAust Environmental Engineer	**Dr. Mohammad Hossein Bazyar** BEng MEng Ph.D MIEAust CPEng NER Senior Environmental Consultant
01 September 2022	Rev (3)	**Victor Kirpichnikov** MEnv Studies, Bsc (Hons), WHS Cert IV Senior Environmental Consultant	**Victor Kirpichnikov** MEnv Studies, Bsc (Hons), WHS Cert IV Senior Environmental Consultant

REFERENCES

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Planning Certificate Under Section 10.7, Certificate No: 537, 495 Fourth Avenue, Austral NSW 2179, 28 July 2021.

Eurofins Environment Testing Pty Ltd, 15 October 2021, Certificate of Analysis 832883-S, prepared for Geotesta Pty Ltd

Eurofins Environment Testing Pty Ltd, 15 October 2021, Certificate of Analysis 832883-W, prepared for Geotesta Pty Ltd

Eurofins Environment Testing Pty Ltd, 25 February 2022, Certificate of Analysis 866757-S-V2, prepared for Geotesta Pty Ltd

Information about this report

The report contains the results of a contamination investigation conducted for a specific purpose and client. The results should not be used by other parties, or for other purposes, as they may contain neither adequate nor appropriate information. In particular, the investigation does not cover contamination issues unless specifically required to do so by the client.

Test Hole Logging

The information on the test hole logs (boreholes, test pits, exposures etc.) is based on a visual and tactile assessment, except at the discrete locations where test information is available (field and/or laboratory results). The test hole logs include both factual data and inferred information.

Groundwater

Unless otherwise indicated, the water levels presented on the test hole logs are the levels of free water or seepage in the test hole recorded at the given time of measuring. The actual groundwater level may differ from this recorded level depending on material permeability (i.e. depending on response time of the measuring instrument). Further, variations of this level could occur with time due to such effects as seasonal, environmental and tidal fluctuations or construction activities. Confirmation of groundwater levels, phreatic surfaces or piezometric pressures can only be made by appropriate instrumentation techniques and monitoring programmes.

Interpretation of Results

The discussion or recommendations contained within this report normally are based on a site evaluation from discrete test hole data. Generalized, idealized or inferred subsurface conditions (including any geotechnical cross-sections) have been assumed or prepared by interpolation and/or extrapolation of these data. As such these conditions are an interpretation and must be considered as a guide only.

Change in Conditions

Local variations or anomalies in the generalized ground conditions do occur in the natural environment, particularly between discrete test hole locations. Additionally, certain design or construction procedures may have been assumed in assessing the soil-structure interaction behaviour of the site. Furthermore, conditions may change at the site from those encountered at the time of the geotechnical investigation through construction activities and constantly changing natural forces.

Any change in design, in construction methods, or in ground conditions as noted during construction, from those assumed or reported should be referred to GEOTESTA for appropriate assessment and comment.

Environmental Verification

Verification of the environmental/contamination assumptions and/or model is an integral part of the design process-investigation, construction verification, and performance monitoring. Variability is a feature of the natural environment and, in many instances,

verification of soil or rock quality, or foundation levels, is required. There may be a requirement to extend foundation depths, to modify a foundation system or to conduct monitoring as a result of this natural variability. Allowance for verification by geotechnical personnel accordingly should be recognized and programmed during construction.

Reproduction of Reports

Where it is desired to reproduce, the information contained in our contamination report, or other technical information, for the inclusion in contract documents or engineering specification of the subject development, such reproductions should include at least all of the relevant test hole and test data, together with the appropriate standard description sheets and remarks made in the written report of a factual or descriptive nature. Reports are the subject of copyright and shall not be reproduced either totally or in part without the express permission of Geotesta.

Appendix A

Diagrams

Figure 2: Soil Samples Location

Appendix B

Aerial Photographs

Aerial Photo 1947

Aerial Photo 1965

Aerial Photo 1975

Aerial Photo 1978

Aerial Photo 1984

Aerial Photo 1986

Aerial Photo 1991

Aerial Photo 1998

Aerial Photo 2000

Aerial Photo 2004

Aerial Photo 2005

Aerial Photo 2007

Aerial Photo 2009

Aerial Photo 2011

Aerial Photo 2014

Aerial Photo 2015

Aerial Photo 2016

Aerial Photo 2018

Aerial Photo 2019

Aerial Photo 2020

Aerial Photo 2021

Appendix C

Planning Certificate Under Section 10.7

LIVERPOOL CITY COUNCIL

PLANNING CERTIFICATE UNDER SECTION 10.7
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Ref.: NE996:112030
Ppty: 168726

Cert. No.: 537

Applicant:
GEOTESTA PTY LTD
7 BUSINESS PARK DRV
NOTTING HILL VIC 3168

Receipt No.: 4961351
Receipt Amt.: 53.00
Date: 28-Jul-2021

The information in this certificate is provided pursuant to Section 10.7(2) of the Environmental Planning and Assessment Act (EP&A Act) 1979, as prescribed by Schedule 4 of the Environmental Planning and Assessment Regulation (EP&A Regulation) 2000. The information has been extracted from Council's records, as they existed at the date listed on the certificate. Please note that the accuracy of the information contained within the certificate may change after the date of this certificate due to changes in Legislation, planning controls or the environment of the land.

The information in this certificate is applicable to the land described below.

Legal Description: **PART LOT 12 DP 1103748**

Street Address: **495 FOURTH AVENUE, AUSTRAL NSW 2179**

Note: Items marked with an asterisk (*) may be reliant upon information transmitted to Council by a third party public authority. The accuracy of this information cannot be verified by Council and may be out-of-date. If such information is vital for the proposed land use or development, applicants should instead verify the information with the appropriate authority.

Note: Commonly Used Abbreviations:
LEP: Local Environmental Plan
DCP: Development Control Plan
SEPP: State Environmental Planning Policy
EPI: Environmental Planning Instrument

1. Names of relevant planning instruments and DCPs

(a) The name of each EPI that applies to the carrying out of development on the land is/are listed below:

LEPs:

Not Applicable

SEPPs*:

SEPP No. 33 – Hazardous and Offensive Development
SEPP No. 50 – Canal Estate Development
SEPP No. 55 – Remediation of Land
SEPP No. 65 – Design Quality of Residential Flat Development
SEPP (Building Sustainability Index: BASIX) 2004
SEPP No. 70 – Affordable Housing (Revised Schemes)
SEPP (Infrastructure) 2007
SEPP (Mining, Petroleum Production and Extractive Industries) 2007
SEPP (Miscellaneous Consent Provisions) 2007
SEPP (State and Regional Development) 2011
SEPP (Education Establishments and Child Care Facilities) 2017
SEPP (Vegetation in Non-Rural Areas) 2017
SEPP (Concurrences and Consents) 2018
SEPP (Primary Production and Rural Development) 2019
SEPP (Koala Habitat Protection) 2019
SEPP (Western Sydney Aerotropolis) 2020
SEPP No 19 – Bushland in Urban Areas
SEPP No 21 – Caravan Parks
SEPP (Exempt and Complying Development Codes) 2008
SEPP (Affordable Rental Housing) 2009
SEPP (Sydney Region Growth Centres) 2006
SEPP No 64 – Advertising and Signage
SEPP (Housing for Seniors or People with a Disability) 2004

Deemed SEPPs*:

SREP No 20 – Hawkesbury – Nepean River (No. 2 – 1997)

(b) The name of each draft EPI, or Planning Proposal (which has been subject to community consultation).

Draft LEPs:

N/A

Draft SEPPs*:

Draft SEPP (Competition) 2010

(c) The name of each DCP that applies to the carrying out of development on the land.

Liverpool Growth Centre Precincts DCP

2. Zoning and land use under relevant LEPs and /or SEPPs

This section contains information required under subclauses 2 and 2A of Schedule 4 of the EP&A Regulation 2000. Subclause 2 of the regulation requires Council to provide information with respect to zoning and land-use in areas zoned by, or proposed to be zoned by, a LEP. Subclause 2A of Schedule 4 of the regulation requires Council to provide information with respect to zoning and land-use in areas which are zoned by, or proposed to be zoned by, the SEPP (Sydney Region Growth Centres) 2006. The land use and zoning information under any EPI applying to the land is given below.

(a) Name of zone, and the EPI from which the land zoning information is derived.

R3 Medium Density Residential - SEPP (Sydney Region Growth Centres) 2006

(b) The purposes for which development may be carried out within the zone without the need for development consent

Home-based child care; Home occupations

(c) The purposes for which development may not be carried out within the zone except with development consent

Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dual occupancies; Dwelling houses; Group homes; Manor homes; Neighbourhood shops; Places of public worship; Residential flat buildings; Roads; Secondary dwellings; Semi-detached dwellings; Seniors housing; Studio dwellings; Any other development not specified in item (b) or (d)

(d) The purposes for which the instrument provides that development is prohibited within the zone

Agriculture; Air transport facilities; Airstrips; Amusement centres; Boat repair facilities; Boat sheds; Business premises; Caravan parks; Cemeteries; Charter and tourism boating facilities; Correctional centres; Crematoria; Depots; Electricity generating works; Entertainment facilities; Extractive industries; Freight transport facilities; Function centres; Helipads; Highway service centres; Home occupations (sex services); Industries; Information and education facilities; Marinas; Moorings; Mortuaries; Office premises; Passenger transport facilities; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Restricted premises; Retail premises; Rural supplies; Service stations; Sex services premises; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Vehicle sales or hire premises; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Wholesale supplies

(a) Name of zone, and the EPI from which the land zoning information is derived.

B1 Neighbourhood Centre - SEPP (Sydney Region Growth Centres) 2006

(b) The purposes for which development may be carried out within the zone without the need for development consent

Home-based child care; Home occupations

(c) The purposes for which development may not be carried out within the zone except with development consent

Amusement centres; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Business premises; Child care centres; Community facilities; Drainage; Educational establishments; Environmental facilities; Environmental protection works; Flood mitigation works; Food and drink premises; Home businesses; Home industries; Hostels; Hotel or motel accommodation; Kiosks; Medical centres; Neighbourhood shops; Office premises; Passenger transport facilities; Places of public worship; Public administration buildings; Recreation areas; Roads; Service stations; Serviced apartments; Shops; Shop top housing; Veterinary hospitals

(d) The purposes for which the instrument provides that development is prohibited within the zone

Any development not specified in item (b) or (c).

(a) Name of zone, and the EPI from which the land zoning information is derived.

RE1 Public Recreation - SEPP (Sydney Region Growth Centres) 2006

(b) The purposes for which development may be carried out within the zone without the need for development consent

Environmental protection works

(c) The purposes for which development may not be carried out within the zone except with development consent

Building identification signs; Business identification signs; Child care centres; Community facilities; Drainage; Environmental facilities; Flood mitigation **works; Information and education facilities; Kiosks; Markets; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Restaurants; Roads; Take away food and drink premises; Water recreation structures; Waterbodies (artificial)**

(d) The purposes for which the instrument provides that development is prohibited within the zone

Any development not specified in item (b) or (c)

Note: Schedule 1 of an EPI and Clause 53 of the SEPP (Western Sydney Aerotropolis SEPP) 2020 permits certain development which would otherwise be prohibited within a zone. Any clause applying to the land is shown below.

(e) If a dwelling house is a permitted use, are there any principal development standards applying to the land that fix minimum land dimensions for the erection of a dwelling house?

No

(f) Does the land include or comprise critical habitat?

No

(g) Is the land is in a conservation area (however described):

No

(h) Is there an item of environmental heritage (however described) situated on the land

No

3. Complying development

The information below outlines whether complying development is permitted on the land as per the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18(1) (c3) and 1.19 SEPP of the (Exempt and Complying Development Codes) 2008 only. The table does not specify whether any code applies to the land; applicants should read the full extent of the code with their building certifier, solicitor, or other professional to determine whether any code applies to the land.

The first column identifies the code(s). The second column describes the extent of the land in which exempt and complying development is permitted, as per the clauses above, for the code(s) given to the immediate left. The third column indicates the reason as to why exempt and complying development is prohibited on some or all of the land, and will be blank if such development is permitted on all of the land.

Code	Extent of the land for which development is permitted:	The reason(s) as to why development is prohibited:

Code	Extent of the land for which development is permitted:	The reason(s) as to why development is prohibited:
Housing Code, Rural Housing Code, Greenfield Housing Code and Low Rise Medium Density Housing Code	**Part**	Part of the land is identified as being **reserved for a public purpose** (Clause 1.19(1)(b) or Clause 1.19(5)(b))
Commercial and Industrial (New Buildings and Additions) Code	**Part**	Part of the land is identified as being **reserved for a public purpose** (Clause 1.19(1)(b) or Clause 1.19(5)(b))
General Development Code, Container Recycling Facilities Code, Fire Safety Code, Housing Alterations Code, Commercial and Industrial Alterations Code, Subdivisions Code, and Demolition Code	**All**	

Note: Despite information in the table above, Complying development codes do not apply and certain Exempt Codes do not apply or are modified in areas subject to land-use zoning under the SEPP (Western Sydney Aerotropolis) 2020.

Note: If council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement below will describe that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

Nil

4. Coastal protection*

Has the Department of Finance, Services and Innovation notified Council of the land being affected by 38 or 39 of the Coastal Protection Act, 1979?

No

4A. Certain information relating to beaches and coasts*

(a) Has an order has been made under Part 4D of the Coastal Protection Act 1979 on the land (or on public land adjacent to that land)?

No

(b) Has Council been notified under section 55X of the Coastal Protection Act 1979 that temporary coastal protection works have been placed on the land (or on public land adjacent to that land), and if works have been so placed, is council is satisfied that the works have been removed and the land restored in accordance with that Act?

Not applicable

4B. Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works*

Has the owner (or any previous owner) of the land consented, in writing, that the land is subject to annual charges under section 496B of the Local Government Act 1993 for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act)?

No

5. Mine subsidence*

Is the land a proclaimed to mine subsidence district within the meaning of the Coal Mine Subsidence Compensation Act 2017?

No

6. Road widening and road realignment

Is the land is affected by any road widening or road realignment under:

(a) Division 2 of Part 3 of the Roads Act 1993?*

No

(b) An EPI?

No

(c) A resolution of the council?

No

7. Council and other public authority policies on hazard risk restrictions

The following table lists hazard/risk policies that have been adopted by Council (or prepared by another public authority and subsequently adopted by Council). The right-most column indicates whether the land is subject to any controls from those policies, but it does not confirm if that hazard/risk is present on the land..

Hazard/Risk	Adopted Policy	Does this hazard/risk policy apply to the land?
Landslip hazard	Western Sydney Aerotropolis DCP 2020	**No**
Bushfire hazard	Liverpool DCP 2008	**No**
	Liverpool Growth Centre Precincts DCP*	**Yes**
	Edmondson Park South DCP 2012	**No**
	Western Sydney Aerotropolis DCP 2020	**No**
	Planning for Bushfire Protection (Rural Fire Services, 2006)*	**Yes**
	Pleasure Point Bushfire Management Plan	**No**
Tidal inundation	Nil	**No**
Subsidence	Nil	**No**
Acid Sulphate Soils	Liverpool LEP 2008	**No**
	Liverpool DCP 2008	**No**
Potentially Contaminated Land	Liverpool DCP 2008	**No**
	Liverpool Growth Centre Precincts DCP*	**Yes**, see Figure 2-8 of Schedule 1 of the Liverpool Growth Centres Precinct DCP
	Western Sydney Aerotropolis DCP 2020	**No**
Potentially Saline Soils	Liverpool DCP 2008	**No**

Hazard/Risk	Adopted Policy	Does this hazard/risk policy apply to the land?
	Liverpool Growth Centre Precincts DCP*	**Yes**, see Figure 2-4 of Schedule 1 of the Liverpool Growth Centres Precinct DCP
	Western Sydney Aerotropolis DCP 2020	**No**

Note: Land for which a policy applies does not confirm that the land is affected by that hazard/risk. For example, all land for which the Liverpool DCP applies is subject to controls relating to contaminated land, as this policy contains triggers and procedures for identifying potential contamination. Applicants are encouraged to review the relevant policy, and other sections of this certificate, to determine what effect, if any, the policy may have on the land.

7A. Flood related development controls information

(1) Is the land, or part of the land, within the flood planning area and subject to flood-related development controls?

No

For details of these controls, please refer to the flooding section of the relevant DCP(s) as specified in Section 1(c) of this certificate.

(2) Is the land, or part of the land, between the flood planning area and the probable maximum flood and subject to flood related development controls?

No

For details of these controls, please refer to the flooding section of the relevant DCP(s) as specified in Section 1(c) of this certificate.

Note:

Flood planning area has the same meaning as in the Floodplain Development Manual.

Floodplain Development Manual means the Floodplain Development Manual (ISBN 0 7347 5476 0) published by the NSW Government in April 2005.

Probable maximum flood has the same meaning as in the Floodplain Development Manual.

8. Land reserved for acquisition

Does a LEP, draft LEP, SEPP or draft SEPP identify the acquisition of the land, or part of the land, by a public authority, as referred to in section 3.15 of the Act?

Yes

9. Contribution Plans

Liverpool Contributions Plan 2014 - Austral and Leppington North Precincts

9A. Biodiversity certified land*

Is the land, or part of the land, biodiversity certified land (within the meaning of Part 8 of the Biodiversity Conservation Act 2016)?

Yes, part/all of the land is bio-diversity certified land

For information about what biodiversity certification means if your property is "Yes, certified" or "Yes, non-certified", please visit: https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/biodiversity-certification

10. Biodiversity stewardship sites *

Is the land subject to a Biodiversity stewardship sites under Part 5 of the Biodiversity Conservation Act 2016, as notified to Council by the Chief Executive of the Office of Environment and Heritage?

No

10A. Native vegetation clearing set asides*

Is the land a set aside area under section 60ZC of the Local Land Services Act 2013, as notified of the existence of the set aside area by Local Land Services or the public register?

No

11. Bushfire prone land

Is the land or part of the land, bushfire prone land as defined by the EP&A Act 1979?

Yes, part of the land is bushfire prone land

12. Property vegetation plans*

Is Council aware of the land being subject to a Property Vegetation Plan under the Native Vegetation Act 2003?

No, Liverpool is excluded from the operation of the Native Vegetation Act 2003

13. Orders under Trees (Disputes between Neighbours) Act 2006*

Does an order, made under the Trees (Disputes Between Neighbours) Act 2006 in relation to carrying out of work in relation to a tree on the land, apply?

No, Council has not been notified of an order

14. Directions under Part 3A*

Is there a direction (made by the Minister) that a provision of an EPI in relation to a development does not have effect?

No

15. Site compatibility certificates and conditions for seniors housing*

(a) Is there is a current site compatibility certificate (seniors housing), in respect of proposed development on the land?

No, Council has not been notified of an order.

16. Site compatibility certificates for infrastructure, schools or TAFE establishment *

(a) s there is a current site compatibility certificate (infrastructure) or site compatibility certificate (schools or TAFE establishments), in respect of proposed development on the land?

No, Council has not been notified of an order

17. Site compatibility certificates and conditions for affordable rental housing*

Is there is a current site compatibility certificate (Affordable housing), in respect of proposed development on the land?

No, Council has not been notified of an order.

18. Paper subdivision information*

Does any development plan adopted by a relevant authority (or proposed plan subject to a consent ballot) apply to the land? If so the date of the subdivision order that applies to the land.

No

19. Site verification certificates*

Does a current site verification certificate, apply to the land?

No, Council is not aware of a site verification certificate

20. Loose-fill asbestos insulation *

Is a dwelling on the land listed on the register (maintained by the NSW Department of Fair Trading) as containing loose-fill asbestos insulation?

No

Note: despite any listing on the register, any buildings constructed before 1980 may contain loose-fill asbestos insulation or other asbestos products.

21. Affected building notices and building product rectification orders*

Is there any affected building notice (as in Part 4 of the Building Products (Safety) Act 2017) of which the council is aware that is in force in respect of the land?

No

Is there any building product rectification order (as in the Building Products (Safety) Act 2017) of which the council is aware that is in force in respect of the land and has not been fully complied with?

No

Is there any notice of intention to make a building product rectification order (as in the Building Products (Safety) Act 2017) of which the council is aware has been given in respect of the land and is outstanding?

No

22. State Environmental Planning Policy (Western Sydney Aerotropolis) 2020

As per the SEPP (Western Sydney Aerotropolis) 2020, ss the land:

(a) Subject to an ANEF or ANEC contour of 20 or greater?

No

(b1) Affected by the 6km Lighting Intensity Area, or Light Control Zone?

No

(b2) Affected by the Windshear Assessment Trigger Are?

No

(c) Affected by the Obstacle Limitation Surface Are?

Yes

(d) Affected by the Public Safety Area on the Public Safety Area Map?

No

(e1) Within the 3km zone of the Wildlife Buffer Zone Map?

No

(e2) Within the 13km zone of the Wildlife Buffer Zone Map?

Yes

Note: the table above only specifies whether the land is impacted by planning controls related to the Western Sydney Airport. Planning controls also relate to the Bankstown Airport, and are not reflected in this table.

23. Contaminated land

Is the land:

(a) Significantly contaminated land within the meaning of that Act?

No

(b) Subject to a management order within the meaning of that Act?

No

(c) Subject of an approved voluntary management proposal within the meaning of that Act?

No

(d) Subject to an ongoing maintenance order within the meaning of that Act?

No

(e) Subject of a site audit statement within the meaning of that Act? *

No

Note: in this clause 'the Act' refers to the Contaminated Land Management Act 1997.

E Jackson

For further information, please contact
CALL CENTRE – 1300 36 2170

Eddie Jackson

Chief Executive Officer
Liverpool City Council

Appendix D

Borehole Logs

Di1 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.7	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m
0.7-0.9				Stiff	-
0.9-2.5	-	SHALE with clay seam, extremely weathered, very low strength, light-brown	Moist	-	Groundwater not encountered

Di2 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di3 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di4 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di5 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Di6 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.3	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di7 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di8 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.3	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di9 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.3	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di10 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.1m Groundwater not encountered

Di11 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Di12 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di13 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di14 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Di15 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Di16 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.3	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di17 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Di18 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di19 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di20 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.15	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Appendix E

Laboratory Documentation

CHAIN OF CUSTODY RECORD

Company	Geotesta
Address	628-32 Foundry Road, Seven Hills
Contact Name	Dr. Mohammad Hossein Rezyer
Phone No	452454418
Project No	N5069
Project Name	[illegible]
Quote No	[illegible]

Client Sample ID	Date	Matrix	[illegible]	Heavy Metals	[illegible]	TRH	PAH	[illegible]	Asbestos	VOC
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
D8	[illegible]	Soil		X	X					
D9	[illegible]	Soil		X	X					
D10	[illegible]	Soil		X	X					
D11	[illegible]	Soil		X	X					
D12	[illegible]	Soil		X	X					
D13	[illegible]	Soil		X	X					
D14	[illegible]	Soil		X	X					
D15	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X						
[illegible]	[illegible]	Soil		X						
[illegible]	[illegible]	Soil		X		X				
[illegible]	[illegible]	Soil				X				
Total Counts				23	20	2				

Method of Shipment: Courier | Hand Delivered | Postal | Name | Signature | Date | Time

Laboratory Use Only: Received By | SYD / BNE / MEL / PER / ADL / NEW | Signature | Date | Time | Temperature 18.4

Received By | Signature | Date | Time | Report No

332883

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Geotesta Pty Ltd (NSW)
Contact name:	- Mohammad Hossein Bazyar
Project name:	495 FOURTH AVENUE AUSTRAL
Project ID:	NE996
Turnaround time:	5 Day
Date/Time received	Oct 15, 2021 6:10 PM
Eurofins reference	832883

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
×	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
×	Split sample sent to requested external lab.
×	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Trip blank, spike and spike lab logged for BTEX analysis, FB1 has wrong matrix in the COC, TRH will be analysed using vials provided.
Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to - Mohammad Hossein Bazyar - mb@geotesta.com.au.

Note: A copy of these results will also be delivered to the general Geotesta Pty Ltd (NSW) email address.

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- Mohammad Hossein Bazyar**

Report **832883-S**
Project name 495 FOURTH AVENUE AUSTRAL
Project ID NE996
Received Date Oct 15, 2021

Client Sample ID			**Di1**	**Di2**	**Di3**	**Di4**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S21-Oc35714**	**S21-Oc35715**	**S21-Oc35716**	**S21-Oc35717**
Date Sampled			**Oct 14, 2021**	**Oct 14, 2021**	**Oct 14, 2021**	**Oct 14, 2021**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.06	0.17	< 0.4	0.14
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	0.06	0.17	< 0.4	0.14
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	0.17	< 0.4	0.14
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	105	110	INT	129
Tetrachloro-m-xylene (surr.)	1	%	125	123	129	133
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			Di1	Di2	Di3	Di4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35714	S21-Oc35715	S21-Oc35716	S21-Oc35717
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	113	120	INT	132
Heavy Metals						
Arsenic	2	mg/kg	17	12	14	8.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	26	26	36	25
Copper	5	mg/kg	42	45	44	46
Lead	5	mg/kg	33	26	30	24
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	11	8.7	11	11
Zinc	5	mg/kg	56	48	63	56
% Moisture	1	%	20	16	18	20

Client Sample ID			Di5	Di6	Di7	Di8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35718	S21-Oc35719	S21-Oc35720	S21-Oc35721
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.12	0.41	0.27	0.25
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	0.12	0.41	0.27	0.25
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	0.12	0.41	0.27	0.25
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	133	134	121	133
Tetrachloro-m-xylene (surr.)	1	%	135	139	132	139
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			Di5	Di6	Di7	Di8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35718	S21-Oc35719	S21-Oc35720	S21-Oc35721
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	137	141	129	137
Heavy Metals						
Arsenic	2	mg/kg	16	13	16	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	28	25	29	28
Copper	5	mg/kg	39	63	43	43
Lead	5	mg/kg	29	27	36	25
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	8.8	8.5	11	11
Zinc	5	mg/kg	54	48	80	56
% Moisture	1	%	31	19	18	21

Client Sample ID			Di9	Di10	Di11	Di12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35722	S21-Oc35723	S21-Oc35724	S21-Oc35725
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	0.15	0.24	0.27
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			Di9	Di10	Di11	Di12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35722	S21-Oc35723	S21-Oc35724	S21-Oc35725
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	0.15	0.24	0.27
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	0.15	0.24	0.27
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	124	120	121	114
Tetrachloro-m-xylene (surr.)	1	%	142	131	134	125
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	142	128	128	117

Client Sample ID			Di9	Di10	Di11	Di12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35722	S21-Oc35723	S21-Oc35724	S21-Oc35725
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	12	13	11	7.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	26	25	27	44
Copper	5	mg/kg	33	55	38	43
Lead	5	mg/kg	21	25	23	20
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	10	9.7	9.9	27
Zinc	5	mg/kg	52	75	52	75
% Moisture	1	%	19	21	21	23

Client Sample ID			Di13	Di14	Di15	Di16
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35726	S21-Oc35727	S21-Oc35728	S21-Oc35729
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.06	0.05	0.35	0.24
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	0.06	0.05	0.35	0.24
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	0.35	0.24
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	123	135	104	111
Tetrachloro-m-xylene (surr.)	1	%	124	148	104	124

Client Sample ID			Di13	Di14	Di15	Di16
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35726	S21-Oc35727	S21-Oc35728	S21-Oc35729
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	119	141	101	119
Heavy Metals						
Arsenic	2	mg/kg	15	12	24	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	26	26	24	33
Copper	5	mg/kg	42	52	54	41
Lead	5	mg/kg	26	29	45	36
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	10	10	14	11
Zinc	5	mg/kg	61	97	140	84
% Moisture	1	%	21	22	19	15

Client Sample ID			Di17	Di18	Di19	Di20
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35730	S21-Oc35731	S21-Oc35732	S21-Oc35733
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.1	0.42	0.09	0.13
4.4'-DDT	0.05	mg/kg	< 0.05	0.06	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.1	0.48	0.09	0.13
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	0.48	< 0.1	0.13
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	149	119	129	116
Tetrachloro-m-xylene (surr.)	1	%	INT	116	126	117
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			Di17	Di18	Di19	Di20
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35730	S21-Oc35731	S21-Oc35732	S21-Oc35733
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	INT	116	126	119
Heavy Metals						
Arsenic	2	mg/kg	16	20	7.9	8.5
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	27	25	18	19
Copper	5	mg/kg	45	47	61	100
Lead	5	mg/kg	23	53	28	23
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	13	13	10	11
Zinc	5	mg/kg	59	170	110	95
% Moisture	1	%	17	19	20	18

Client Sample ID			D1	D2	TB1	TS1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35734	S21-Oc35735	S21-Oc35737	S21-Oc35741
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	17	8.4	-	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	-
Chromium	5	mg/kg	26	22	-	-
Copper	5	mg/kg	44	64	-	-
Lead	5	mg/kg	32	23	-	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	-
Nickel	5	mg/kg	11	10	-	-
Zinc	5	mg/kg	62	99	-	-
% Moisture	1	%	20	22	-	-
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-

Client Sample ID			D1	D2	TB1	TS1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35734	S21-Oc35735	S21-Oc35737	S21-Oc35741
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
BTEX						
Xylenes - Total*	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	86	-
BTEX						
Benzene	1	%	-	-	-	87
Ethylbenzene	1	%	-	-	-	81
m&p-Xylenes	1	%	-	-	-	80
o-Xylene	1	%	-	-	-	81
Toluene	1	%	-	-	-	85
Xylenes - Total	1	%	-	-	-	81
4-Bromofluorobenzene (surr.)	1	%	-	-	-	82

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Organochlorine Pesticides	Sydney	Oct 21, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Oct 21, 2021	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Metals M8	Sydney	Oct 21, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
BTEX	Sydney	Oct 21, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
% Moisture	Sydney	Oct 18, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 495 FOURTH AVENUE AUSTRAL
Project ID: NE996

Order No.:
Report #: 832883
Phone: 1300852 216
Fax:

Received: Oct 15, 2021 6:10 PM
Due: Oct 25, 2021
Priority: 5 Day
Contact Name: - Mohammad Hossein Bazyar

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Metals M8	BTEX	Suite B14: OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	Di1	Oct 14, 2021		Soil	S21-Oc35714	X		X	X		
2	Di2	Oct 14, 2021		Soil	S21-Oc35715	X		X	X		
3	Di3	Oct 14, 2021		Soil	S21-Oc35716	X		X	X		
4	Di4	Oct 14, 2021		Soil	S21-Oc35717	X		X	X		
5	Di5	Oct 14, 2021		Soil	S21-Oc35718	X		X	X		
6	Di6	Oct 14, 2021		Soil	S21-Oc35719	X		X	X		
7	Di7	Oct 14, 2021		Soil	S21-Oc35720	X		X	X		
8	Di8	Oct 14, 2021		Soil	S21-Oc35721	X		X	X		
9	Di9	Oct 14, 2021		Soil	S21-Oc35722	X		X	X		

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Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
10	Di10	Oct 14, 2021		Soil	S21-Oc35723	X		X	X		
11	Di11	Oct 14, 2021		Soil	S21-Oc35724	X		X	X		
12	Di12	Oct 14, 2021		Soil	S21-Oc35725	X		X	X		
13	Di13	Oct 14, 2021		Soil	S21-Oc35726	X		X	X		
14	Di14	Oct 14, 2021		Soil	S21-Oc35727	X		X	X		
15	Di15	Oct 14, 2021		Soil	S21-Oc35728	X		X	X		
16	Di16	Oct 14, 2021		Soil	S21-Oc35729	X		X	X		
17	Di17	Oct 14, 2021		Soil	S21-Oc35730	X		X	X		
18	Di18	Oct 14, 2021		Soil	S21-Oc35731	X		X	X		
19	Di19	Oct 14, 2021		Soil	S21-Oc35732	X		X	X		
20	Di20	Oct 14, 2021		Soil	S21-Oc35733	X		X	X		

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Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
21	D1	Oct 14, 2021		Soil	S21-Oc35734	X			X		
22	D2	Oct 14, 2021		Soil	S21-Oc35735	X			X		
23	FB1	Oct 14, 2021		Water	S21-Oc35736	X				X	
24	TB1	Oct 14, 2021		Soil	S21-Oc35737		X				
25	TS1	Oct 14, 2021		Soil	S21-Oc35741						X
Test Counts						23	1	20	22	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs..

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	106			70-130	Pass	
4.4'-DDD	%	109			70-130	Pass	
4.4'-DDE	%	116			70-130	Pass	
4.4'-DDT	%	93			70-130	Pass	
a-HCH	%	105			70-130	Pass	
Aldrin	%	119			70-130	Pass	
b-HCH	%	101			70-130	Pass	
d-HCH	%	106			70-130	Pass	
Dieldrin	%	107			70-130	Pass	
Endosulfan I	%	109			70-130	Pass	
Endosulfan II	%	107			70-130	Pass	
Endosulfan sulphate	%	107			70-130	Pass	
Endrin	%	113			70-130	Pass	
Endrin aldehyde	%	116			70-130	Pass	
Endrin ketone	%	101			70-130	Pass	
g-HCH (Lindane)	%	112			70-130	Pass	
Heptachlor	%	106			70-130	Pass	
Heptachlor epoxide	%	110			70-130	Pass	
Hexachlorobenzene	%	109			70-130	Pass	
Methoxychlor	%	96			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	120			70-130	Pass	
Dimethoate	%	77			70-130	Pass	
Ethion	%	110			70-130	Pass	
Fenitrothion	%	103			70-130	Pass	
Methyl parathion	%	110			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mevinphos	%	90			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	80			80-120	Pass	
Cadmium	%	87			80-120	Pass	
Chromium	%	111			80-120	Pass	
Copper	%	92			80-120	Pass	
Lead	%	111			80-120	Pass	
Mercury	%	99			80-120	Pass	
Nickel	%	94			80-120	Pass	
Zinc	%	110			80-120	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	88			70-130	Pass	
Toluene	%	89			70-130	Pass	
Ethylbenzene	%	90			70-130	Pass	
m&p-Xylenes	%	91			70-130	Pass	
o-Xylene	%	92			70-130	Pass	
Xylenes - Total*	%	91			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Copper	S21-Oc31932	NCP	%	85			75-125	Pass	
Zinc	S21-Oc31932	NCP	%	99			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S21-Oc35720	CP	%	92			75-125	Pass	
Cadmium	S21-Oc35720	CP	%	77			75-125	Pass	
Chromium	S21-Oc35720	CP	%	91			75-125	Pass	
Lead	S21-Oc35720	CP	%	92			75-125	Pass	
Mercury	S21-Oc35720	CP	%	85			75-125	Pass	
Nickel	S21-Oc35720	CP	%	79			75-125	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S21-Oc35722	CP	%	118			70-130	Pass	
4.4'-DDD	S21-Oc35722	CP	%	124			70-130	Pass	
4.4'-DDE	S21-Oc35722	CP	%	118			70-130	Pass	
4.4'-DDT	S21-Oc35722	CP	%	95			70-130	Pass	
a-HCH	S21-Oc35722	CP	%	117			70-130	Pass	
Aldrin	S21-Oc35722	CP	%	115			70-130	Pass	
b-HCH	S21-Oc35722	CP	%	120			70-130	Pass	
d-HCH	S21-Oc35722	CP	%	115			70-130	Pass	
Dieldrin	S21-Oc35722	CP	%	118			70-130	Pass	
Endosulfan I	S21-Oc35722	CP	%	120			70-130	Pass	
Endosulfan II	S21-Oc35722	CP	%	113			70-130	Pass	
Endosulfan sulphate	S21-Oc35722	CP	%	111			70-130	Pass	
Endrin	S21-Oc35722	CP	%	93			70-130	Pass	
Endrin aldehyde	S21-Oc35722	CP	%	106			70-130	Pass	
Endrin ketone	S21-Oc35722	CP	%	120			70-130	Pass	
g-HCH (Lindane)	S21-Oc35722	CP	%	120			70-130	Pass	
Heptachlor	S21-Oc35722	CP	%	114			70-130	Pass	
Heptachlor epoxide	S21-Oc35722	CP	%	113			70-130	Pass	
Hexachlorobenzene	S21-Oc35722	CP	%	122			70-130	Pass	
Methoxychlor	S21-Oc35722	CP	%	95			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S21-Oc35722	CP	%	124			70-130	Pass	
Dimethoate	S21-Oc35722	CP	%	101			70-130	Pass	
Ethion	S21-Oc35722	CP	%	110			70-130	Pass	
Fenitrothion	S21-Oc35722	CP	%	111			70-130	Pass	
Methyl parathion	S21-Oc35722	CP	%	113			70-130	Pass	
Mevinphos	S21-Oc35722	CP	%	112			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S21-Oc45639	NCP	%	73			70-130	Pass	
Toluene	S21-Oc45639	NCP	%	77			70-130	Pass	
Ethylbenzene	S21-Oc45639	NCP	%	79			70-130	Pass	
m&p-Xylenes	S21-Oc45639	NCP	%	80			70-130	Pass	
o-Xylene	S21-Oc45639	NCP	%	81			70-130	Pass	
Xylenes - Total*	S21-Oc45639	NCP	%	80			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Oc35714	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-Oc35714	CP	mg/kg	0.06	0.06	4.0	30%	Pass	
4.4'-DDT	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-Oc35714	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Ethion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S21-Oc35714	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-Oc35714	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S21-Oc32283	NCP	%	21	22	8.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Oc35719	CP	mg/kg	13	16	23	30%	Pass	
Cadmium	S21-Oc35719	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-Oc35719	CP	mg/kg	25	29	17	30%	Pass	
Copper	S21-Oc35719	CP	mg/kg	63	74	16	30%	Pass	
Lead	S21-Oc35719	CP	mg/kg	27	33	21	30%	Pass	
Mercury	S21-Oc35719	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-Oc35719	CP	mg/kg	8.5	10	17	30%	Pass	
Zinc	S21-Oc35719	CP	mg/kg	48	56	16	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Oc35721	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-Oc35721	CP	mg/kg	0.25	0.35	35	30%	Fail	Q15
4.4'-DDT	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Hexachlorobenzene	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-Oc35721	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S21-Oc35721	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-Oc35721	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Oc35729	CP	mg/kg	11	8.1	30	30%	Pass	
Cadmium	S21-Oc35729	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-Oc35729	CP	mg/kg	33	27	22	30%	Pass	
Copper	S21-Oc35729	CP	mg/kg	41	40	1.0	30%	Pass	
Lead	S21-Oc35729	CP	mg/kg	36	34	6.0	30%	Pass	
Mercury	S21-Oc35729	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-Oc35729	CP	mg/kg	11	11	5.0	30%	Pass	
Zinc	S21-Oc35729	CP	mg/kg	84	80	5.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Oc35731	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-Oc35731	CP	mg/kg	0.42	0.30	33	30%	Fail	Q15
4.4'-DDT	S21-Oc35731	CP	mg/kg	0.06	< 0.05	23	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
a-HCH	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S21-Oc35731	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-Oc35731	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S21-Oc35731	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-Oc35731	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S21-Oc45638	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S21-Oc45638	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S21-Oc45638	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S21-Oc45638	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S21-Oc45638	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S21-Oc45638	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Asim Khan	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- Mohammad Hossein Bazyar**

Report **832883-W**
Project name 495 FOURTH AVENUE AUSTRAL
Project ID NE996
Received Date Oct 15, 2021

Client Sample ID			**FB1**
Sample Matrix			**Water**
Eurofins Sample No.			**S21-Oc35736**
Date Sampled			**Oct 14, 2021**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
Heavy Metals			
Arsenic	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Oct 22, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 22, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 22, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8	Sydney	Oct 22, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 495 FOURTH AVENUE AUSTRAL
Project ID: NE996

Order No.:
Report #: 832883
Phone: 1300852 216
Fax:

Received: Oct 15, 2021 6:10 PM
Due: Oct 25, 2021
Priority: 5 Day
Contact Name: - Mohammad Hossein Bazyar

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Metals M8	BTEX	Suite B14: OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	Di1	Oct 14, 2021		Soil	S21-Oc35714	X		X	X		
2	Di2	Oct 14, 2021		Soil	S21-Oc35715	X		X	X		
3	Di3	Oct 14, 2021		Soil	S21-Oc35716	X		X	X		
4	Di4	Oct 14, 2021		Soil	S21-Oc35717	X		X	X		
5	Di5	Oct 14, 2021		Soil	S21-Oc35718	X		X	X		
6	Di6	Oct 14, 2021		Soil	S21-Oc35719	X		X	X		
7	Di7	Oct 14, 2021		Soil	S21-Oc35720	X		X	X		
8	Di8	Oct 14, 2021		Soil	S21-Oc35721	X		X	X		
9	Di9	Oct 14, 2021		Soil	S21-Oc35722	X		X	X		

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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Melbourne
6 Monterey Road
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Perth
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Auckland
35 O'Rorke Road
Penrose, Auckland 1061
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43 Detroit Drive
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Project ID: NE996

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Eurofins Analytical Services Manager : Asim Khan

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Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
10	Di10	Oct 14, 2021		Soil	S21-Oc35723	X		X	X		
11	Di11	Oct 14, 2021		Soil	S21-Oc35724	X		X	X		
12	Di12	Oct 14, 2021		Soil	S21-Oc35725	X		X	X		
13	Di13	Oct 14, 2021		Soil	S21-Oc35726	X		X	X		
14	Di14	Oct 14, 2021		Soil	S21-Oc35727	X		X	X		
15	Di15	Oct 14, 2021		Soil	S21-Oc35728	X		X	X		
16	Di16	Oct 14, 2021		Soil	S21-Oc35729	X		X	X		
17	Di17	Oct 14, 2021		Soil	S21-Oc35730	X		X	X		
18	Di18	Oct 14, 2021		Soil	S21-Oc35731	X		X	X		
19	Di19	Oct 14, 2021		Soil	S21-Oc35732	X		X	X		
20	Di20	Oct 14, 2021		Soil	S21-Oc35733	X		X	X		

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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ABN: 50 005 085 521

Melbourne
6 Monterey Road
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Contact Name: - Mohammad Hossein Bazyar

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Metals M8	BTEX	Suite B14: OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
21	D1	Oct 14, 2021		Soil	S21-Oc35734	X			X		
22	D2	Oct 14, 2021		Soil	S21-Oc35735	X			X		
23	FB1	Oct 14, 2021		Water	S21-Oc35736	X				X	
24	TB1	Oct 14, 2021		Soil	S21-Oc35737		X				
25	TS1	Oct 14, 2021		Soil	S21-Oc35741						X
Test Counts						23	1	20	22	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs..

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	98			70-130	Pass	
TRH C10-C14	%	96			70-130	Pass	
Naphthalene	%	100			70-130	Pass	
TRH C6-C10	%	99			70-130	Pass	
TRH >C10-C16	%	93			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	106			80-120	Pass	
Cadmium	%	90			80-120	Pass	
Chromium	%	108			80-120	Pass	
Copper	%	104			80-120	Pass	
Lead	%	107			80-120	Pass	
Mercury	%	111			80-120	Pass	
Nickel	%	105			80-120	Pass	
Zinc	%	99			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S21-Oc26696	NCP	%	85			70-130	Pass	
TRH C10-C14	S21-Oc42247	NCP	%	121			70-130	Pass	
Naphthalene	S21-Oc26696	NCP	%	87			70-130	Pass	
TRH C6-C10	S21-Oc26696	NCP	%	84			70-130	Pass	
TRH >C10-C16	S21-Oc42247	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S21-Oc28505	NCP	%	107			75-125	Pass	
Cadmium	S21-Oc42253	NCP	%	100			75-125	Pass	
Chromium	S21-Oc42253	NCP	%	95			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper	S21-Oc42253	NCP	%	83			75-125	Pass	
Lead	S21-Oc42253	NCP	%	89			75-125	Pass	
Mercury	S21-Oc42253	NCP	%	101			75-125	Pass	
Nickel	S21-Oc42253	NCP	%	87			75-125	Pass	
Zinc	S21-Oc42253	NCP	%	85			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S21-Oc37228	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S21-Oc42253	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S21-Oc42253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S21-Oc42253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Naphthalene	S21-Oc37228	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S21-Oc37228	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S21-Oc42253	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S21-Oc42253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S21-Oc42253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Oc37252	NCP	mg/L	0.003	0.003	2.0	30%	Pass	
Cadmium	S21-Oc37252	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S21-Oc37252	NCP	mg/L	0.007	0.007	2.0	30%	Pass	
Copper	S21-Oc37252	NCP	mg/L	0.012	0.012	4.0	30%	Pass	
Lead	S21-Oc37252	NCP	mg/L	0.009	0.010	2.0	30%	Pass	
Mercury	S21-Oc37252	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S21-Oc37252	NCP	mg/L	0.006	0.007	2.0	30%	Pass	
Zinc	S21-Oc37252	NCP	mg/L	0.035	0.034	2.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised by:

Asim Khan	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: EnviroSampleNSW@eurofins.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murarrie
Phone: +617 3902 4600
Email: EnviroSampleQLD@eurofins.com.au

☐ **Melbourne**
2 Kingsland Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +61 3 8564 5090
Email: EnviroSampleVic@eurofins.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name :	Geotesta	Contact Name:	Victor Kirpichnikov / Dr. Mohammad Bazyar	Purchase Order :	NE896	COC Number :
Office Address :	Unit 06, 20-22 Foundry Road,	Project Manager :	Victor Kirpichnikov / Dr. Mohammad Bazyar	PROJECT Number :	NE896	Eurofins | mgt quote ID :
Seven Hills 2147		Email for results :	vk@geotesta.com.au, mb@geotesta.com.au	PROJECT Name :	495 Fourth Avenue, Austral NSW 2179	Data output format:
Phone: 452454418						

Special Directions & Comments :

Eurofins | mgt Dl water batch number:

Analytes

	Sample ID	Date	Matrix	B7A & B15	Asbestos ID in soil - NEPM & WA Guidelines 0.001% w/w	Heavy Metal MB	pH	CEC	% Clay	BTEX and Volatile TRHs	MB
1	EIL 1	24/02/2022	Soil								X
2	EIL 2	24/02/2022	Soil				X	X	X		X
3	TripSpike / Trip Blank	24/02/2022	QAQC							X	
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
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19											
20											
21											
22											
23											
24											
25											

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
SOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous Iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	125P	60ml plastic	40ml vial	200ml glass	Jar	plastic bag	Sample comments
						X		
						X		
				XX				2 x QAQC vials

Relinquished By:	Victor Kirpichnikov
Date & Time:	24/02/22
Signature:	

Laboratory Staff

Received By:	MR
Date & Time:	25/2/22 6:49PM
Signature:	

Turn around time

1 DAY ☑ 2 DAY ☐ 3 DAY ☐
5 DAY ☐ 10 DAY ☐

Method Of Shipment

☑ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 22.7°C

Report number: 866757 866760

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www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Geotesta Pty Ltd (NSW)
Contact name:	Victor Kirpichnikov (GEOTESTA)
Project name:	495 FOURTH AVENUE - AUSTRAL NSW 2179
Project ID:	NE996
Turnaround time:	1 Day
Date/Time received	Feb 25, 2022 6:49 PM
Eurofins reference	866757

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
×	Split sample sent to requested external lab.
×	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

CEC and %Clay unavailable on 1-day TAT (2-day TAT minimum) and samples received after departure of interstate transit, logged as a 3-day TAT under 866760.
Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Victor Kirpichnikov (GEOTESTA) - vk@geotesta.com.au.

Note: A copy of these results will also be delivered to the general Geotesta Pty Ltd (NSW) email address.

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Victor Kirpichnikov (GEOTESTA)**

Report **866757-S-V2**
Project name 495 FOURTH AVENUE - AUSTRAL NSW 2179
Project ID NE996
Received Date Feb 25, 2022

Client Sample ID			**EIL 1**	**EIL 2**	**TS**	**TB**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S22-Fe54782**	**S22-Fe54783**	**S22-Fe54784**	**S22-Fe54786**
Date Sampled			**Feb 24, 2022**	**Feb 24, 2022**	**Feb 24, 2022**	**Feb 24, 2022**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	9.2	12	-	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	-
Chromium	5	mg/kg	17	19	-	-
Copper	5	mg/kg	22	20	-	-
Lead	5	mg/kg	24	27	-	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	-
Nickel	5	mg/kg	7.8	14	-	-
Zinc	5	mg/kg	95	78	-	-
% Moisture	1	%	26	25	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	6.6	-	-
TRH C6-C10	1	%	-	-	100	-
Total Recoverable Hydrocarbons						
Naphthalene	1	%	-	-	95	-
TRH C6-C9	1	%	-	-	100	-
BTEX						
Benzene	1	%	-	-	110	-
Ethylbenzene	1	%	-	-	100	-
m&p-Xylenes	1	%	-	-	100	-
o-Xylene	1	%	-	-	100	-
Toluene	1	%	-	-	100	-
Xylenes - Total	1	%	-	-	100	-
4-Bromofluorobenzene (surr.)	1	%	-	-	111	-
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	-	-	< 20
Naphthalene[N02]	0.5	mg/kg	-	-	-	< 0.5
TRH C6-C10	20	mg/kg	-	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	-	< 20
BTEX						
Benzene	0.1	mg/kg	-	-	-	< 0.1
Toluene	0.1	mg/kg	-	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
o-Xylene	0.1	mg/kg	-	-	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	-	118

Client Sample ID			EIL 2
Sample Matrix			**Soil**
Eurofins Sample No.			**S22-Fe54787**
Date Sampled			**Feb 24, 2022**
Test/Reference	LOR	Unit	
% Moisture	1	%	25
% Clay	1	%	13
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	33
Cation Exchange Capacity			
Cation Exchange Capacity	0.05	meq/100g	8.7

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Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Metals M8	Sydney	Feb 25, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
pH (1:5 Aqueous extract at 25°C as rec.)	Sydney	Feb 25, 2022	7 Days
- Method: LTM-GEN-7090 pH by ISE			
% Clay	Brisbane	Mar 02, 2022	14 Days
- Method: LTM-GEN-7040			
% Moisture	Sydney	Feb 25, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Sydney	Feb 28, 2022	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Mar 02, 2022	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Feb 25, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Feb 25, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Feb 25, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
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1/21 Smallwood Place
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 495 FOURTH AVENUE - AUSTRAL NSW 2179
Project ID: NE996

Order No.: NE996
Report #: 866757
Phone: 1300852 216
Fax:

Received: Feb 25, 2022 6:49 PM
Due: Feb 28, 2022
Priority: 1 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						% Clay	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Moisture Set	Cation Exchange Capacity	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X	X		
Sydney Laboratory - NATA # 1261 Site # 18217							X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794						X						
Mayfield Laboratory - NATA # 1261 Site # 25079												
Perth Laboratory - NATA # 2377 Site # 2370												
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	EIL 1	Feb 24, 2022		Soil	S22-Fe54782			X	X			
2	EIL 2	Feb 24, 2022		Soil	S22-Fe54783		X	X	X			
3	TS	Feb 24, 2022		Soil	S22-Fe54784							X
4	TB	Feb 24, 2022		Soil	S22-Fe54786						X	
5	EIL 2	Feb 24, 2022		Soil	S22-Fe54787	X			X	X		
Test Counts						1	1	2	3	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	94			80-120	Pass	
Cadmium	%	101			80-120	Pass	
Chromium	%	93			80-120	Pass	
Copper	%	92			80-120	Pass	
Lead	%	96			80-120	Pass	
Mercury	%	98			80-120	Pass	
Nickel	%	92			80-120	Pass	
Zinc	%	94			80-120	Pass	
LCS - % Recovery							
% Clay	%	95			70-130	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)	%	87			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	71			70-130	Pass	
Naphthalene	%	78			70-130	Pass	
TRH C6-C10	%	71			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	89			70-130	Pass	
Toluene	%	82			70-130	Pass	
Ethylbenzene	%	85			70-130	Pass	
m&p-Xylenes	%	84			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
o-Xylene			%	86			70-130	Pass	
Xylenes - Total*			%	84			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S22-Fe52829	NCP	%	87			75-125	Pass	
Cadmium	S22-Fe53438	NCP	%	104			75-125	Pass	
Chromium	S22-Fe52829	NCP	%	90			75-125	Pass	
Copper	S22-Fe52829	NCP	%	92			75-125	Pass	
Lead	S22-Fe53438	NCP	%	108			75-125	Pass	
Mercury	S22-Fe53438	NCP	%	110			75-125	Pass	
Nickel	S22-Fe52829	NCP	%	90			75-125	Pass	
Zinc	S22-Fe52829	NCP	%	89			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Fe53437	NCP	mg/kg	11	10	9.0	30%	Pass	
Cadmium	S22-Fe53440	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-Fe53437	NCP	mg/kg	27	28	2.0	30%	Pass	
Copper	S22-Fe53437	NCP	mg/kg	12	12	<1	30%	Pass	
Lead	S22-Fe53440	NCP	mg/kg	19	18	9.0	30%	Pass	
Mercury	S22-Fe53440	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-Fe53437	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S22-Fe53437	NCP	mg/kg	8.1	7.0	14	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Fe54783	CP	%	25	27	6.0	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	S22-Fe54783	CP	pH Units	6.6	6.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-Fe46527	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Naphthalene	S22-Fe46527	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S22-Fe46527	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Fe46527	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S22-Fe46527	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S22-Fe46527	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S22-Fe46527	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S22-Fe46527	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S22-Fe46527	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Fe54787	CP	%	25	26	3.0	30%	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)	S22-Fe54787	CP	uS/cm	33	35	4.7	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Cation Exchange Capacity	M22-Fe45795	NCP	meq/100g	19	18	1.0	30%	Pass	

Comments

V2 - New version created to include Clay and CEC results for sample EIL 2 from report 866760

Eurofins | Environment Testing accreditation number 1261, site 18217 is currently in progress of a controlled transition to a new custom built location at 179 Magowar Road, Girraween, NSW 2145. All results on this report denoted as being performed by Eurofins | Environment Testing Unit F3, Building F, 16 Mars road, Lane Cove West, NSW 2066, corporate site 18217, will have been performed on either Lane Cove or new Girraween site

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised by:

Emma Beesley	Analytical Services Manager
Charl Du Preez	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
John Nguyen	Senior Analyst-Metal (NSW)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Appendix H

"Addendum Letter – Data Gap Contamination Assessment, 495 Fourth Avenue, Austral NSW 2179, Letter#NE996_ Addendum Letter_ 26October2022, 26 October 2022"

Geosyntec consultants

engineers | scientists | innovators

Geosyntec Consultants Pty Ltd
ABN 23 154 745 525
Suite 1, Level 9, 189 Kent St
Sydney NSW 2000
www.geosyntec.com.au

28 October 2022

Mr Victor Kirpichnikov
Geotesta Pty Ltd
Unit 6 20-22 Foundry Road
Seven Hills NSW 2147

Via email: vk@geotesta.com.au

Dear Victor,

Re: Review of Addenda Letter Report, 495 Fourth Ave Austral NSW 2179

As requested, as a Certified Environmental Practitioner in Site Contamination (CEnvP-SC), I have reviewed a document entitled 'Addendum Letter - Data Gap Contamination Assessment for 495 Fourth Ave Austral NSW 2179 – Project Reference NE996, prepared for Bathla Group dated 26 October 2022. The assessment was undertaken following a preliminary contamination assessment where it was recommended that a data gap investigation be undertaken. The objective of the additional investigation was to provide additional information in relation to an area where a former residence was located.

Upon my review of the Preliminary Site Investigation (Rev 3) and this Letter Report, I am satisfied with the conclusion and that it was prepared in accordance with the requirements of the relevant standards, legislation and guidelines, namely:

- NSW EPA Contaminated Land Guideline - Consultants Reporting on Contaminated Land (2020).
- State Environmental Planning Policy Resilience and Hazards (Chapter 4); and,
- National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) (NEPM 2013).

I concur with the findings of these investigations that the site is suitable for low density residential subject to an unexpected finds protocol when civil works occur due to the presence of extensive vegetation. Should you have any further queries, please contact me on 02 92518070.

Yours sincerely,

Peter Moore
Principal Engineer CEnvP - SC
Geosyntec Consultants Pty Ltd

26 October 2022
Project# NE996
Letter# NE996_AddendumLetter_26October 2022

Bathla Group
137 Gilba Road, Girraween, NSW 2145

Attn.: Liverpool City Council

CC: Mr Shams Abbasi

PROJECT: 495 FOURTH AVENUE, AUSTRAL NSW 2179 (LOT/SECTION/PLAN NO: LOT121 DP1220414)

Addendum Letter - Data Gap Contamination Assessment

To whom it may concern:

This Addendum Letter presents the findings of the Data Gap Contamination Assessment which was conducted in response to the Conclusion and Recommendations within the Preliminary Site Investigation (PSI) Report (*"Preliminary Site Investigation (PSI) Report for 495 Fourth Avenue, Austral NSW 2179, Report# NE996, Rev (3), 1 September 2022"*, refer to **Appendix D**) states:

"The conducted Preliminary Site Investigation's limited soil sampling and analysis program indicated a **low** risk of soil and groundwater contamination. It is the opinion of Geotesta Pty Ltd that the site is suitable for the proposed low density residential development pending the results of an additional Data Gap Contamination Assessment.

- Due to the existence of a data-gap in this investigation, a further Data Gap Assessment in the vicinity of the footprint of the former structure/dwelling located on the southern boundary is required to address the potential area of concern identified in the AECs by determining the existence of any asbestos contamination. The Data Gap Assessment findings will be issued as an Addendum Letter to this report."

The Preliminary Site Investigation's (PSI) identified asbestos as a Contaminant of Primary Concern (COPC) within the Area of Environmental Concern (AEC) for the footprint for the former dwelling located on the central southern boundary (refer to Figure 1 in **Appendix A**). Asbestos soil sampling was not conducted at the time of the

PSI.

The Data Gap Contamination Assessment was conducted on the 29 August 2022, for the assessment of asbestos in soils within the footprint for the former dwelling located on the central southern boundary within the site.

Sampling Procedures

General soil sampling procedures included wearing of plastic disposable gloves when handling sampling equipment and soil and changed between collections of samples. All sampling equipment was clean prior to commencement of sampling. Equipment for soil sampling included a 7 mm sieve and a stainless-steel sampling shovel. All equipment was decontaminated between samplings. The following measures have been utilized during the sampling to achieve the sampling quality controls.

Sample Containers - Soil samples collected during the investigation were placed immediately into laboratory prepared plastic bags. Standard identification labels were adhered to each individual plastic bags and labelled according to sample ID, date and sampler ID.

Sample Tracking and Identification - All samples were identified with a unique sample number and all sampling details were included on the sample label and were reproduced on the field sample log and chain of custody records. Samples were received at the laboratory in accordance with NEPM requirements. Refer to **Appendix C** for the Sample Receipt Advice.

Decontamination - All equipment used in the sampling program, which included a stainless-steel sampling shovel and 7 mm sieve were decontaminated prior to use and between samples to prevent cross contamination. Decontamination of equipment involved the following procedures:

- Cleaning equipment with potable water to remove any contamination;

- Cleaning in a solution of Decon-90TM;

- Rinsing in clean demineralised water then wiping with clean lint free cloths.

Sample Transport - All samples were packed securely at the time of collection and were transported under chain of custody from the Site to Eurofins MGT Services in Lane Cove. During the project, the laboratory reported that all the samples arrived intact and were analysed within their relative holding times for the respective analytes.

Assessment Criteria

Based on the proposed development, the Bonded Asbestos Health Screening Levels (HSLs) in residential soils *(NEPM 2013)* was adopted for the 'site' (refer to **Table 1**). In addition to the identification of asbestos in the soil samples, the 'presence/absence' of asbestos in soil material has been adopted as the SAC.

(*Eurofins reported that insufficient sample was received for the identification of Asbestos in soil, as per NEPM & WA Guidelines - 0.001% w/w*)

Table 1: Health Screening Levels for asbestos contamination in soil

	Health Screening Level (w/w)			
Form of asbestos	**Residential A[1]**	**Residential B[2]**	**Recreational C[3]**	**Commercial/ Industrial D[4]**
Bonded ACM	0.01 %	0.04 %	0.02 %	0.05 %
FA and FA[5] (friable asbestos)	0.001 %			
All forms of asbestos	No visible asbestos for surface soil			

Notes:

1. Residential A with garden/accessible soil also includes children's day care centres, preschools and primary schools.

2. Residential B with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.

3. Recreational C includes public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and unpaved footpaths.

4. Commercial/industrial D includes premises such as shops, offices, factories and industrial sites.

5. The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres.

Field Investigations

Fieldwork for this investigation was carried out on 29 August 2022 and included the test pitting of four (4) test pits within the footprint of the former dwelling. The sampling locations are illustrated in Figures 2 in **Appendix A** for the site respectively and soil samples were collected at an approximate depth of 0.15 m (bgl).

Due to extensive grass / vegetation onsite at the time of the Data Gap Assessment, an inspection for visible ACM could not be conducted effectively, Geotesta recommends the requirement for an Unexpected Finds Protocol (UFP) when the site is cleared. (Refer to the Photographic log in **Appendix B**).

Investigation Results

No Asbestos was detected at the Reporting Limit of 0.01% w/w in the samples analysed and were therefore within the Site Assessment Criteria (SAC). Refer to **Appendix C** for the Laboratory Documentation. Eurofins reported that insufficient sample was received for the identification of Asbestos in soil, *as per NEPM & WA Guidelines - 0.001% w/w.*

Conclusion and Recommendations

Based on the assessment undertaken, the following conclusions and recommendations can be made:

- All the contaminant concentrations of interest that were analysed in the Preliminary Site Investigation and the Data Gap Assessment were found to be within the site assessment criteria (SAC).

- The conducted Preliminary Site Investigation and the Data Gap Assessment's limited soil sampling and analysis program indicated a **low** risk of soil and groundwater contamination. It is the opinion of Geotesta Pty Ltd that the site is suitable for the proposed low density residential development.

- Due to extensive grass / vegetation onsite at the time of the Data Gap Assessment, Geotesta recommends the requirement for an Unexpected Finds Protocol (UFP) when the proposed earthworks commence at the site.

For and behalf of

Geotesta Pty Ltd

Victor Kirpichnikov
Senior Environmental Consultant
MEnv Studies, BSc (Hons), WHS Cert IV
NSW Licenced Asbestos Assessor (Lic# LAA001290)
Member of the Australasian Land and Groundwater Association (ALGA)

References

NEPC (1999, amended 2013) National Environmental Protection (Assessment of Site Contamination) Measure (ASC NEPM, 1999 amended 2013).

NSW EPA, Contaminated Land Guidelines, Sampling Design – Application (2022)

NSW EPA (2020) Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Land.

NSW EPA (2017) 3rd Ed. Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme

WA DoH (2009) Guidelines for the Assessment, Remediation and Management of Asbestos-contaminated Sites in Western Australia.

State Environmental Planning Policy No 55 (1979), Environmental Planning and Assessment Act 1979.

Standards Australia, 2005. Guide to the sampling and Investigation of Potentially Contaminated Soil, Part 1: Non-volatile and Semi-volatile compounds. AS 4482.1

Preliminary Site Investigation (PSI) Report for 495 Fourth Avenue, Austral NSW 2179, Report# NE996, Rev (3), 1 September 2022

Eurofins Environment Testing Pty Ltd, 29 August 2022, Certificate of Analysis 918694-AID, prepared for Geotesta Pty Ltd

Appendix A

Diagrams

Figure 1 - footprint for the former dwelling located on the central southern boundary within the site.

Figure 2 – Data Gap Assessment sampling locations within the footprint for the former dwelling within the site.

Appendix B

Photographic Log

Photograph 1 – view of the extensive vegetation, facing south.

Photograph 2 – view of the extensive vegetation, within the area of the footprint of the former dwelling.

Appendix C

Laboratory Documentation

eurofins | mgt

Sydney — Phone: +61 2 9900 8400 — Email: EnviroSampleNSW@eurofins.com.au

Brisbane — Unit 1/21 Smallwood Place, Murarrie — Phone: +617 3902 4600 — Email: EnviroSampleQLD@eurofins.com.au

Melbourne — Email: EnviroSampleVic@eurofins.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name: Geotesta	Contact Name: Victor Kirpichnikov / Dr. Mohammad Bazyar	Purchase Order: NE996	COC Number:
Office Address: Unit 06, 20-22 Foundry Road, Seven Hills 2147	Project Manager: Victor Kirpichnikov / Dr. Mohammad Bazyar	PROJECT Number: NE996	Eurofins | mgt quote ID:
Phone: 452454418	Email for results: vk@geotesta.com.au, mb@geotesta.c[…]	PROJECT Name: 405 Fourth Avenue Austral NSW	Data output format:

Special Directions & Comments:

Eurofins \| mgt DI water batch number:

Analytes: Asbestos ID in soil - NEPM & WA Guidelines - 0.001% w/w

Some common holding times (with correct preservation). For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Formaldehyde	7 days	ASLP, TCLP	7 days

	Sample ID	Date	Matrix	Asbestos ID in soil - NEPM & WA Guidelines - 0.001% w/w	500ml P	250ml G	40ml vial	60ml P	80ml P	500ml P	Jar	Asbestos bag	Sample comments
1	ASB1	29/08/2022	Soil	X							X		[illegible] sieved
2	ASB2	29/08/2022	Soil	X							X		[illegible] sieved
3	ASB3	29/08/2022	Soil	X							X		[illegible] sieved
4	ASB4	29/08/2022	Soil	X							X		[illegible] sieved
5													
6													
7													
8													
9													
10													
11													
12													
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21													
22													
23													
24													
25													

	Laboratory Staff	Turn around time	Method Of Shipment	Temperature on arrival:
Relinquished By: Victor Kirpichnikov	Received By:	1 DAY ☐ 2 DAY ☐ 3 DAY ☐	Courier	
Date & Time: 29/08/22	Date & Time:	5 DAY ☒ 10 DAY ☐	Hand Delivered	Report number: 918694
Signature:	Signature:		Postal; Courier Consignment #:	

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Sample Receipt Advice

Company name:	Geotesta Pty Ltd (NSW)
Contact name:	Victor Kirpichnikov (GEOTESTA)
Project name:	495 FOURTH AVENUE AUSTRAL NSW
Project ID:	NE996
Turnaround time:	5 Day
Date/Time received	Aug 29, 2022 5:42 PM
Eurofins reference	918694

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
×	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
×	Split sample sent to requested external lab.
×	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Victor Kirpichnikov (GEOTESTA) - vk@geotesta.com.au.

Note: A copy of these results will also be delivered to the general Geotesta Pty Ltd (NSW) email address.

Certificate of Analysis

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention:	Victor Kirpichnikov (GEOTESTA)
Report	918694-AID
Project Name	495 FOURTH AVENUE AUSTRAL NSW
Project ID	NE996
Received Date	Aug 29, 2022
Date Reported	Sep 06, 2022

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name 495 FOURTH AVENUE AUSTRAL NSW
Project ID NE996
Date Sampled Aug 29, 2022
Report 918694-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
ASB1	22-Au0067205	Aug 29, 2022	Approximate Sample 95g Sample consisted of: Brown fine-grained clayey soil, plant residue, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
ASB2	22-Au0067206	Aug 29, 2022	Approximate Sample 87g Sample consisted of: Brown fine-grained clayey soil, plant residue, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
ASB3	22-Au0067207	Aug 29, 2022	Approximate Sample 98g Sample consisted of: Brown fine-grained clayey soil, plant residue, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
ASB4	22-Au0067208	Aug 29, 2022	Approximate Sample 115g Sample consisted of: Brown fine-grained clayey soil, plant residue, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Sep 06, 2022	Indefinite

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 495 FOURTH AVENUE AUSTRAL NSW
Project ID: NE996

Order No.:
Report #: 918694
Phone: 1300852 216
Fax:

Received: Aug 29, 2022 5:42 PM
Due: Sep 6, 2022
Priority: 5 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Asbestos - AS4964
Sydney Laboratory - NATA # 1261 Site # 18217						X
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	ASB1	Aug 29, 2022		Soil	S22-Au0067205	X
2	ASB2	Aug 29, 2022		Soil	S22-Au0067206	X
3	ASB3	Aug 29, 2022		Soil	S22-Au0067207	X
4	ASB4	Aug 29, 2022		Soil	S22-Au0067208	X
Test Counts						4

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Asbestos Counter/Identifier:

Chamath JHM Annakkage	Senior Analyst-Asbestos

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Appendix D

"Preliminary Site Investigation (PSI) Report for 495 Fourth Avenue, Austral NSW 2179, Report# NE996, Rev (3), 1 September 2022"

Geosyntec consultants

engineers | scientists | innovators

Geosyntec Consultants Pty Ltd
ABN 23 154 745 525
Suite 1, Level 9, 189 Kent St
Sydney NSW 2000
www.geosyntec.com.au

1 September 2022

Mr Victor Kirpichnikov
Geotesta Pty Ltd
Unit 6 20-22 Foundry Road
Seven Hills NSW 2147

Via email: vk@geotesta.com.au

Dear Victor,

Re: Review of Contamination Status, 495 Fourth Ave Austral NSW 2179

As requested, as a Certified Environmental Practitioner in Site Contamination, I have reviewed a document entitled 'Preliminary Site Investigation, 495 Fourth Ave Austral NSW 2179 - Document No. NE996, prepared for Bathla Group dated 1 September 2022.

The objective of the investigation was to provide an assessment of the potential ground contamination status of the above property, proposed for a low-density residential development. The investigation was based on information obtained from an initial desktop study, historical photography reviews and a site inspection followed by soil sampling and testing in parts of the site area, formerly used for market gardening. The results of the investigations were then presented in this report. My objective was to review and provide final certification for this report.

Upon my review of the Preliminary Site Investigation (Rev 3), I am satisfied with the report's conclusions and that it was prepared in accordance with the requirements of the relevant standards, legislation and guidelines, namely:

- NSW EPA Contaminated Land Guideline - Consultants Reporting on Contaminated Land (2020).
- State Environmental Planning Policy Resilience and Hazards (Chapter 4); and,
- National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013) (NEPM 2013).

I concur with the findings of this preliminary assessment that the site is suitable for low density residential subject to additional investigation in the vicinity of a former residence on site. Should you have any further queries, please contact me on 02 92518070.

Yours sincerely,

Peter Moore
Principal Engineer CEnvP - SC
Geosyntec Consultants Pty Ltd

PRELIMINARY SITE INVESTIGATION REPORT

PROJECT:	**495 Fourth Avenue, Austral NSW 2179**
CLIENT:	**Bathla Group**
DATE:	**1 September 2022**
REPORT No.:	**NE996**

GEOTESTA

GEOTESTA PTY LTD ABN 91 851 620 815
Unit 6/20-22 Foundry Road, Seven Hills, NSW 2147
1300 852 216 info@geotesta.com.au geotesta.com.au

Contents

Appendices

A **Diagrams**

B **Aerial Photographs**

C **Planning Certificate Under Section 10.7**

D **Borehole Logs**

E **Laboratory Documentation**

EXECUTIVE SUMMARY

Geotesta was engaged by Bathla Group to conduct a Preliminary Site Investigation (PSI), on the site referred to as 495 Fourth Avenue, Austral NSW 2179.

The PSI was conducted in general accordance with *"Managing Land Contamination Planning Guidelines SEPP 55"* and this report compiled, taking into consideration the *NSW EPA Consultants reporting on Contaminated Land Guidelines update May 2020*. The PSI contains an appraisal of the site's history and a report based on a visual site inspection and assessment. All relevant information about the site was assessed to determine the potential for site contamination. To support the outcomes of the PSI a limited sampling and analysis program was implemented.

This report is based only on the information provided at the time of this report preparation and may not be valid if changes are made to the site conditions and/or soil and groundwater.

The objectives of this PSI are to:

- assess the past uses of the site and the potential environmental impacts that they may have had on the environmental condition of the site;
- conduct a limited soil sampling and analysis program to assess the current environmental condition;
- identify potential environmental risks associated with the site;
- address the requirements of the planning authority.

The scope of works was developed with referral to the following documents and guidelines:

- Australian Standard AS 4482.1 (2005) *Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Non volatile and semi-volatile compounds;*
- Australian Standard AS 4482.2-1999 *Guide to the sampling and investigation of potentially contaminated soil Part 2: Volatile substances;*
- National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 No1;
- Department of Environment and Conservation NSW: *Guidelines for Assessing Former Market Gardens (2005);* and
- other relevant NSW guidelines and legislation, including the *NSW EPA Sampling Guidelines (1995).*

The scope of works included the following:

- A site inspection;
- historical aerial photographs;
- public record search, such as Council, OEH, EPA etc;
- geological and hydrogeological review;
- conduct a limited soil sampling and analysis program; and
- production of this report on the contamination status of the site.

Activities undertaken to achieve the above objectives are reported and discussed in the following sections.

Based on the historical review, background review and site inspection, the site was used for agricultural activities from as early as 1947. Small dwelling / structure was situated on the southern boundary, until it was demolished 1978 – 1984 (latest). The site since 1985 has been primarily used as a market garden until 2005. From 2009 to the present date, the site appeared to be vacant land, as was observed during site inspection.

A summary of the laboratory results is presented as the following:

- All detected concentrations of heavy metals were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC) – Health Investigation Levels (HIL A) and Ecological Investigation Levels (EIL).
- All detected concentrations of OCP/OPP were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC).

Based on the assessment undertaken, the following conclusions and recommendations can be made:

- All the contaminant concentrations of interest that were analysed were found to be within the site assessment criteria (SAC).
- The conducted Preliminary Site Investigation's limited soil sampling and analysis program indicated a **low** risk of soil and groundwater contamination. It is the opinion of Geotesta Pty Ltd that the site is suitable for the proposed low density residential development pending the results of an additional Data Gap Contamination Assessment.

  - Due to the existence of a data-gap in this investigation, a further Data Gap Assessment in the vicinity of the footprint of the former structure/dwelling located

on the southern boundary is required to address the potential area of concern identified in the AECs by determining the existence of any asbestos contamination. The Data Gap Assessment findings will be issued as an Addendum Letter to this report.

1. INTRODUCTION

Geotesta was engaged by Bathla Group to conduct a Preliminary Site Investigation (PSI) on the site referred to as 495 Fourth Avenue, Austral NSW 2179.

The PSI contains an appraisal of the site's history and a report based on a visual site inspection and assessment. Based on the site's history, the PSI was conducted in accordance with the Department of Environment and Conservation (NSW) contaminated sites guideline: *"Guidelines for Assessing Former Market Gardens (2005)"*. All relevant information about the site was assessed to determine the potential for site contamination. To support the outcomes of the PSI's limited sampling and analysis program was implemented.

This report is based only on the information provided at the time of this report preparation and may not be valid if changes are made to the site conditions and/or soil and groundwater.

2. PLANNING GUIDELINES

The land is to be developed for standard residential use. The planning authority must consider the possibility that the previous land use has the potential to cause contamination of the site as well as the potential risk to health or the environment from that contamination. The PSI encompasses a limited sampling regime to determine if there is a potential for land contamination that has a potential to impact the development application (DA).

The Guidelines recommend that re-zonings, development control plans and development applications (DAs) are backed up by information demonstrating that the land is suitable for the proposed use or can be made suitable, either by remediation or by the way the land is used.

3. OBJECTIVES

The objectives of this PSI are to:

- assess the past uses of the site and the potential environmental impacts that they may have had on the environmental condition of the site;
- conduct a limited soil sampling and analysis program to assess the current environmental condition;
- identify potential environmental risks associated with the site;
- assess the type, extent, and level of potential contamination
- address the requirements of the planning authority.

4. SCOPE OF WORKS

The following scope of works was implemented to achieve the objectives of the PSI.

The PSI was conducted in general accordance with the Australian Standard AS 4482.1 (2005) *Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Non-volatile and semi-volatile compounds*, the Australian Standard AS 4482.2-1999 *Guide to the sampling and investigation of potentially contaminated soil Part 2: Volatile substances*, the National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 No1, and other relevant NSW guidelines and legislation, including the *NSW EPA Sampling Guidelines (1995).*

The scope of works included the following:

- A site inspection;
- historical aerial photographs;
- public record search, such as Council, OEH, EPA etc;
- geological and hydrogeological review;
- conduct a limited soil sampling and analysis program; and
- production of this report on the contamination status of the site.

Activities undertaken to achieve the above objectives are reported and discussed in the following sections.

5. SITE DESCRIPTION

5.1 Site Identification

The site under investigation is situated at 495 Fourth Avenue, Austral NSW 2179 on the north eastern end of Fourth Avenue and is approximately 50 km (by road) west of Sydney CBD. The site is rectangle in shape, with an area of approximately 1.189 ha. The site is located within Liverpool City Council. Site overview is provided in Figure 1.

The site identification detail is presented in Table 1.

Table 1: Site Identification

Site Details	Site Observations
Address	495 Fourth Avenue, Austral NSW 2179
Lot/Section/Plan no:	Lot. 121 DP1220414
Local Government Area	Liverpool City Council
Site Area	1.189 ha
Zoning	B1: Neighbourhood Centre
Current Land Use	Vacant Land

Figure 1. Site Location and features

5.2 Proposed Development

The proposed development of the site is for new low-density residential development including residential lots and street access. The site lies within a B1 Neighbourhood Centre zone. Similar neighbourhood centre zones are to the east of the site. Public Recreation zones are directly south to the site. The site is surrounded by rural residential properties, with a School located to the north.

5.3 Site Details, Location and Topography

At the time of site investigation, the subject site was vacant land, with overgrown dense grass. The site exhibits a relatively distinct downward slope to the north of approximately 5-10 degree.

Regional topographic maps indicate that the site is approximately 84m above sea level, referenced to Australian Height Datum (AHD).

5.4 Geological, Soil Landscapes and Drainage

The Penrith 1:100,000 Geological Sheet indicates that the site is situated on the boundary of the Bringelly Shale of the Wianamatta Group consisting of shale, carbonaceous claystone, claystone, laminite, fine to medium-grained lithic sandstone, rare coal and tuff (Rwb).

The Penrith 1:100,000 Soil Landscape Series Sheet (1989) indicates site soils comprise on the boundary of the Blacktown soil landscape soil landscapes. The Blacktown soil landscape consists of shallow to moderately deep (>1 m) hard setting mottled texture contrast soils, red and brown podzolic soils on crests grading to yellow podzolic soils on lower slopes and in drainage lines.
The nearest environmental receptor is Kemps Creek which is located approximately 1.2 km to the west. The surface flow is to the north and any runoff could eventually flow to Kemps Creek.

5.5 Site Regional Meteorology

The following climate information from the Commonwealth Bureau of Meteorology website (http://www.bom.gov.au/) can be obtained:

- Mean maximum temperature of 24.0°C from January to December at Badgerys Creek NSW, approximately 8.0 km away from the site.
- Mean minimum temperature of 10.9°C from January to December at Badgerys Creek NSW, approximately 8.0 km away from the site.
- Mean annual rainfall of 639.0 mm from January to December at Badgerys Creek, NSW approximately 8.0 km away from the site.

5.6 Hydrogeology

Groundwater in the area occurs as an unconfined aquifer in fractures and joints of the shale (fracture rock aquifer). The 1:2 000 000 Department of Water Resources Groundwater in NSW, Assessment of Pollution Risk map indicates that the site is likely to be underlain by shales and that the potential for groundwater movement is likely to be low.

A search of Department Primary Industries - Office of Water records identified one groundwater well located within an approximate distance of 750 metres from the site, shown in Table 2.

Table 2: Groundwater Wells

Bore ID:	Bore Depth(m)	Latitude	Longitude
GW100571.1.1	271	-33.914377	150.81645

5.7 Acid Sulphate Soils

The Department for Infrastructure, Planning and Natural Resources (DIPNR) Acid Sulphate Soils Risk Mapping (1997) indicates that the Site is not expected to be underlain by acid sulphate soils.

5.8 Site History

5.8.1 Site Inspection

The aerial historical photographs and site walkover conducted 14 October 2021, indicated that the area of investigation has mainly been used for agricultural purposes /market garden since 1947. Aerial photography indicates adjacent south of the site has been used as residential / agricultural usage since 1947. Aerial photography indicates the site was also used for residential purposes, with a dwelling located along the southern boundary from 1947 until 1978 (latest 1984).

The site was covered with overgrown dry, dense grass. During site investigation it was determined that the site can be classified as vacant land. No stockpiles, storage sheds or vehicles were observed. The surrounding areas appear to have or are vacant land directly east of the site, as well as low-density residential and agricultural purposes. No signs of contamination, odours or “vegetation die-back” were observed at the time of the inspection.

5.8.2 Aerial Photograph Review

An aerial photograph search was conducted on the site and the local area. The aerial photos were viewed with observations presented in Table 3. Photographs are presented in Appendix B.

Table 3: Aerial Photograph Review

Year	Site Observations	Surrounding Area
1947	• Black and white photograph (poor quality) • Suspected structure located on the southern boundary • Suspected agricultural usage • Remaining site - vacant exposed ground surfaces	• Black and white photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Suspected agricultural residential located to the south
1965	• Black and white photograph • Dwelling located on the southern boundary • Suspected agricultural usage • Remaining site - vacant exposed ground surfaces Multiple trees located in north-western and western boundary	• Black and white photograph • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east and south
1975	• Black and white photograph • Dwelling located on the southern boundary • Suspected agricultural usage • Multiple trees located in north-western and western boundary Agricultural usage established	• Black and white photograph • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east and south; • Dwelling appears to have been demolished adjacent south
1978	• No change from previous photograph.	• No change from the previous photograph.
1984	• Black and white photograph (poor quality) • Black and white photograph • Dwelling located on the southern boundary had since been demolished • Suspected agricultural usage • Multiple trees located in north-western and western boundary	• Black and white photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Suspected agricultural residential located to the east and south; • Structure appears to have been demolished adjacent south
1986	• Colour photograph • Multiple trees located in north-western and western boundary • Agricultural usage	• Colour photograph • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east and south;
1991	• No change from previous photograph.	• No change from previous photograph.
1998	• Colour photograph • Multiple trees located in north-western and western boundary	• Colour photograph • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north

	• Signs of recent earthworks / land clearing for agricultural usage	• Signs of recent earthworks / land clearing for agricultural usage, adjacent south and east • Agricultural residential located to the east and south;
2000	• Colour photograph • Multiple trees located in north-western and western boundary • Agricultural usage	• Colour photograph • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east, north and south;
2004	• Colour photograph (poor quality) • Multiple trees located in north-western and western boundary • Agricultural usage	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east, north and south;
2005	• Colour photograph • Multiple trees located in north-western and western boundary • Agricultural usage	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east, north and south;
2007	• Colour photograph • Multiple trees located in north-western and western boundary • Vacant ground grassed exposed surfaces	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east, north and south; • Increase in residential development
2009	• No change from previous photograph	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Agricultural residential located to the east, north and south; • Increase in residential development
2011	• No change from previous photograph	• No change from previous photograph
2014	• No change from previous photograph.	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • Construction earthworks located adjacent north • Agricultural residential located to the east, north and south; • Increase in residential development
2015	• No change from previous photograph.	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • School premises located adjacent north • Agricultural residential located to the east, north and south; • Increase in residential development
2016	• No change from previous photograph.	• No change from previous photograph.

2018	• No change from previous photograph.	• No change from previous photograph
2019	• No change from previous photograph.	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • School premises located adjacent north • Agricultural residential located to the east, north and south; • Residential development located to the east
2020	• No change from previous photograph.	• Colour photograph (poor quality) • Fourth Avenue located adjacent west • Gurner Avenue located adjacent north • School premises located adjacent north • Agricultural residential located to the east, north and south; • Ongoing residential development located to the east
2021	• No change to previous photograph	• No change to previous photograph

5.8.3 NSW OEH Records

The site or nearby surrounding areas within 1 km, have no notices under the Contaminated Land Management Act (1997) or the Environmentally Hazardous Chemicals Act (1985). No sites were identified in the Sites List of NSW Contaminated Notified to the EPA as of 29 August 2022.

5.9 Summary of Site History

Based on the historical review, background review and site inspection, the site was used for agricultural activities from as early as 1947. Small dwelling / structure was situated on the southern boundary, until it was demolished 1978 – 1984 (latest). The site since 1985 has been primarily used as a market garden until 2005. From 2009 to the present date, the site appeared to be vacant land, as was observed during site inspection.

5.10 Planning Certificate

Planning Certificate Under Section 10.7 (Certificate No: 537) for the site was sourced from Liverpool City Council on 28 July 2021. The certificate is presented in Appendix C. The Planning Certificate, which is applicable to Lot 12 DP 1103748, indicates that there are no matters arising under Section 59(2) of the Contaminated Land Management Act 1997 (Act), as follows:

- The land is NOT significantly contaminated land (or part of the land) within the meaning of the Act at the date when the certificates were issued.
- The land is NOT the subject to a management order within the meaning of the Act at the date when the certificates were issued.

- The land is NOT the subject of an approval voluntary management proposal within the meaning of the Act at the date when the certificates were issued.
- The land is NOT the subject of an ongoing maintenance order within the meaning of the Act at the date when the certificates were issued.
- The land is NOT the subject of a site audit statement within the meaning of the Act at the date when the certificates were issued.

5.11 Historical Land Titles Search

A search for the Historical Land Titles was not conducted as a review of the site aerial photographs, in conjunction with an interview with the current owner, indicates the site has not been used for anything other than vacant land, market garden, and possible residential living purposes.

6. CONCEPTUAL SITE MODEL

6.1 Areas of Environmental Concern

Our assessment of site AECs and COPCs (Table 5) is made based on available site history, aerial photograph interpretation and site walkovers.

Table 5: Areas of Environmental Concern and Contaminants of Primary Concern (COPC)

AEC	Potential for Contamination	COPC	Contamination Likelihood
A – Market Gardens	Pesticides and heavy metals may have been used during development of market gardens.	HM and OCP/OPP	Medium - High
B – Areas of Dwellings/Sheds	Heavy metals may have been used underneath dwellings. Sheds or areas surrounding sheds may have been used as fuel storage, oil or drums of unknown content; asbestos sheeting, may include lead-based paints.	HM, OCP/OPP, and Asbestos	Medium-High

6.2 Potential Receptors and Sensitive Environments

The residents and visitors/workers on site are identified as immediately sensitive environmental receptors. A summary of the identified potential receptors and sensitive environments is detailed below in Table 6.

Table 6: Potential Receptors and Sensitive Environments

Receptors/Environments	Potential Pathway
Human Receptors: • Future site workers and visitors • Site labourers/workers • Residents of adjacent properties • Trespassers	• Direct skin contact • Ingestion of contaminated soil
Sensitive Environments: • Kemps Creek Tributaries	• Migration via stormwater run-off or within groundwater • Migration into underlying soil

Given the heavily modified nature of the site and surrounding land, flora and fauna receptors are not considered to be sensitive.

Given the lack of extractive bores in the area and expected deep clays over shale, groundwater is not considered a significant receptor.

6.3 Potential for Migration and Exposure of Contamination

Site history information and onsite inspection observations indicated a potential for contaminants to present a direct contact and inhalation exposure risk on site. Exposure routes of contaminants could potentially be through direct contact with exposed soils (Heavy Metals, OCP/OPP and Asbestos). These exposure risks are "likely" to pose high risks to receptors and environments during any demolition, earthworks, or construction phases within the site.

There is a potential for these contaminates to be present within underlying soils with the ability for such contaminates to migrate horizontally through stormwater runoff pathways from the proposed development.

6.4 Assessment of Preliminary Site Investigation and Recommendations

Based on the historical review, background review and site inspection, the site was used for agricultural activities from as early as 1947. Small dwelling / structure was situated on the southern boundary, until it was demolished 1978 – 1984 (latest). The site since 1985 has been primarily used as a market garden until 2005. From 2009 to the present date, the site appeared to be vacant land, as was observed during site inspection. Footprint of the former dwelling onsite is illustrated in Figure 1.

Based on the site's history and walkthrough, the site is considered to have the following environmental concerns of:

- Areas of possible cropping/farming activity may have introduced heavy metals and pesticides into the soil.
- Areas of a previous dwellings/shed, may have introduced hazardous building materials and other contamination, such as OCP/OPP, lead based paints and asbestos.

To address identified AECs, intrusive soil/water sampling regime is recommended to determine what, if any, remediation is required to render the site fit for residential land use. A limited soil sampling plan is to be developed based on a judgemental or systematic sampling pattern and risk-based assessment.

Assessment shall address each of the identified AECs and assess COPC identified for each AEC (Table 3). Results of the site testing shall be assessed against Site Acceptance Criteria (SAC) with reference to *ASC NEPM (1999, amended 2013).*

7. SAMPLING AND ANALYSIS QUALITY PLAN (SAQP)

The SAQP followed the seven step Data Quality Objective (DQO) process. The Data Quality Objective (DQO) process was applied to the investigation to ensure that all data collection activities were appropriate and achieved the project objectives. The DQO process consists of seven (7) steps, outlined below, which define the type, quality, and quantity of data needed to support decisions relating to the environmental condition of a site.

7.1 Step 1: State the Problem

The 'problem' as it stands, is that an intrusive investigation is required to address the data gaps and to assess the condition of AECs. The purpose of this investigation is to determine the suitability of the site based on the field and analytical data collected.

7.2 Step 2: Identify the Decision

Based on the objectives outlined in **Section 3**, it will be necessary to consider the following questions:

- Has the nature, extent and source of soil impacts been defined?
- Where contaminants are present, do the concentrations have the potential to adversely impact on human health or the environment?
- Does the collected data provide sufficient information to allow the selection and design of an appropriate remedial strategy, if necessary?

7.3 Step 3: Identify Inputs to the Decision

Key data required for the decision-making process includes:

- Qualitative site information presented in the site overview;
- National and State guidelines endorsed under the *NSW Contaminated Land Management Act 1997*;
- Visual assessment of the site and material condition;
- Intrusive investigation;
- Identification of potential receptors, both on and off site;
- The assessment of exposure pathways including conceptual fate and transport modelling of potential contaminants;
- Laboratory analysis of potential soil contaminants including:

- Heavy Metals (Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc),
- Organochlorine Pesticides (OCP), and
- Organophosphorus Pesticides (OPP),

- Comparison of the results of the laboratory analysis to the applicable guidelines to evaluate the suitability of the site for the proposed use.

7.4 Step 4: Define the Study Boundaries

The boundaries of the study area are within the allotment cadastral site boundaries (refer to **Figure 1**). The vertical extent of the assessment is limited to surface soils to a maximum depth of 0.2 m bgl where natural soils were encountered. The study is temporally limited to the days of the sampling, that is, 14 October 2021 and the 24 February 2022.

7.5 Step 5: Develop a Decision Rule

The assessment includes a comparison of individual sample results to the generic and site-specific criteria detailed within *Schedule B (1) Guideline on Investigation Levels for Soil and Groundwater* of the *National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPM) (Amended 2013),* published by the National Environment Protection Council (NEPC). The assessment criteria are outlined and justified in Section 10.

The decision rules can be defined as: -

- If the laboratory quality assurance/ quality control data are within the acceptable ranges, the data will be considered suitable for use;
- If the COPCs are reported above the adopted criteria and/or at elevated levels (where no criteria are available) then it will be considered whether further assessment, remediation and/or management measures are required; and
- Where concentrations are below the assessment criteria, then no further assessment, remediation and/or management of that contaminant, in that area, in that media, is required. This is provided samples have been collected at the required frequencies (as per NSW EPA guidelines) and adequately represent the conditions on site, if not, additional sampling may be required.

7.6 Step 6: Specify Limits on Decision Errors

Two types of decision errors may occur due to uncertainties or limitations in the project data set:

- A site is deemed uncontaminated when, in fact, it is contaminated; and

- A site is deemed contaminated when, in fact, it is uncontaminated.

The consequences for incorrectly assessing a site as posing an unacceptable risk are considered less significant than the consequences for incorrectly assessing a site as posing acceptable risk.

Factors that may contribute to one of the above decision errors include:

- Sampling error – the sampling program does not adequately detect the variability of a contaminant from point to point across the site. That is, the samples collected are not representative of the site conditions; and
- Measurement error – may occur through the sample collection, handling, preparation, analysis, and data reduction processes.

The combination of the above errors is known as 'total study error' and is minimised through the correct choice of sampling design and measurement systems.

Geotesta will mitigate the risk of decision error by:

- Assignment of fieldwork tasks to suitably trained consulting staff, and experienced contractors;
- Assignment of laboratory analytical tasks to reputable NATA accredited laboratories; and
- Assignment of data interpretation tasks to suitably trained Geotesta consulting staff, and outsourcing to technical experts where required.

A range of data quality indicators (DQI) have been adopted to facilitate the assessment of the completeness, comparability, representativeness, precision and accuracy, shown in Table 4.

Table 4. Data Quality Indicators (DQI)

DQI	Consideration		Compliance
Completeness[1]	Field	All critical locations sampled	A total of twenty (20) primary soil samples were collected via auger drilling from twenty (20) locations within the site.
		All samples collected (from grid and at depth)	All samples were collected in accordance with the limited sampling plan
		SOPs appropriate and complied with	All samples were collected in accordance with relevant guidelines, industry practices, and Australian Standards
		Experienced sampler	Samples were recovered by a suitably qualified and experienced sampler
		Documentation correct	All required documentation was completed including written site records and photographic logs
	Laboratory	All critical samples analysed according to SAQP	All of the recovered samples were analysed by a NATA accredited laboratory
		All analytes analysed according to SAQP	Each recovered sample was analysed for the analytes required by the SAQP in accordance with the context for which the sample was recovered
		Appropriate methods and LORs	Eurofins is a suitably qualified NATA accredited laboratory, therefore the appropriate methods and LORs were adopted for the testing, as outlined within the analytical reports
		Sample documentation complete	Appropriate chain of custody documentation was completed. A sample receipt was provided detailing the condition of the samples upon receipt
		Sample holding times complied with	All samples were analysed within the appropriate holding times as detailed in *NEPM 2013*
Comparability[2]	Field	Same SOPs used on each occasion	Each sample was recovered in accordance with the SOPs
		Experienced sampler	Samples were recovered by two suitably qualified and experienced samplers
		Climatic conditions	Samples stored in insulated containers with ice bricks. Climatic conditions were ideal on the day of sampling
		Same types of samples collected	The type of samples collected was consistent

DQI	Consideration		Compliance
	Laboratory	Sample analytical methods used	Eurofins is a suitably qualified NATA accredited laboratory, therefore the appropriate methods were adopted for the testing, as outlined within the analytical reports
		Sample LORs	Eurofins is a suitably qualified NATA accredited laboratory, therefore the appropriate LORs were adopted for the testing, as outlined within the analytical reports
		Same laboratories	Eurofins conducted all of the analytical testing of primary samples
		Same units	The same units were used for the respective analytes
Representativeness[3]	Field	Appropriate media sampled according to SAQP	All samples were recovered in accordance with the SAQP
		All media identified in SAQP	The investigation was limited to the analysis of the soil
	Laboratory	All samples analysed according to SAQP	Eurofins is a suitably qualified NATA accredited laboratory, therefore all samples were analysed in accordance with the appropriate requirements
Precision[4]	Field	SOPs appropriate and complied with	All samples were recovered in accordance with the SOPs
	Laboratory	Laboratory and inter-laboratory duplicates	Laboratory and inter-laboratory duplicates are analysed as a component of the standard operating procedures of Eurofins in accordance with the conditions of their NATA accreditation
		Field duplicates	Field duplicate samples were to be recovered at a rate of 5% and labelled with sample IDs not known to the laboratories and were analysed along with the primary samples by Eurofins as detailed within Section 8.
Accuracy[5]	Field	SOPs appropriate and complied with	All samples were recovered in accordance with the SOPs
	Laboratory	Analysis of field blanks, rinsate blanks, reagent blanks, method blanks, matrix spikes, matrix spike duplicates, surrogate spikes, reference materials, laboratory control samples, and laboratory-prepared spikes	Laboratory quality assurance and quality control samples were incorporated in this investigation by Eurofins as summarised in Section 9.6.

Notes: SOP = Standard Operating Procedures; SAQP = Sampling, Analysis and Quality Plan; LOR = Limit of Reporting

1. *A measure of the amount of useable data (expressed as %) from a data collection activity.*
2. *The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event.*
3. *The confidence (expressed qualitatively) that data are representative of each media present on the site.*
4. *A quantitative measure of the variability (or reproducibility) of data.*
5. *A quantitative measure of the closeness of reported data to the true value.*

7.7 Step 7: Optimise the Design

In order to optimise the design, a sampling program was developed in accordance with the NSW EPA (1995) *Contaminated Sites: Sampling Design Guidelines*. Quality assurance and quality control procedures were implemented as outlined within **Section 9**.

8. SAMPLING PROGRAM

8.1 Field Investigation

Fieldwork for this investigation was carried out on 14 October 2021 and included drilling of twenty (20) boreholes. Boreholes were advanced by both hand auger and a vehicle-mounted auger to a maximum depth of 0.2 m below ground level (bgl). The sampling locations are presented in Figure 2. Environmental soil samples were collected from the auger and held for selected analysis.

A follow up site visit was conducted on 24 February 2022, for the determination of site-specific Ecological Investigation Levels (EILs). A sample's soil properties were measured for the site-specific derivation of ACLs for Cr(III), Cu, Ni and Zn. Soil properties include:

- pH, Cation Exchange Capacity (CEC) and % Clay.

EIL background (ABC) levels were obtained from the average of the laboratory results of background samples.

8.2 Sampling Program

The sampling locations are illustrated in Figures 2 (Appendix A) for the site, respectively. Soil samples were collected to a maximum depth of 0.15 m (bgl). Standard procedures were used for sampling and soil sampling methodology was completed to meet data quality objectives. Standard procedures (sampling directly from the retracted auger) described in Section 9 below were used for sampling and soil sampling methodology was completed to meet data quality objectives.

8.3 Rationale for Sampling Program and Location

Samples numbers are not in accordance with superseded *NSW EPA Sampling Guidelines (1995*), given the PSI was conducted with a limited sampling program, the sampling point regime does not meet Sampling Design requirements but based on use of entire site was used for market gardening, with a former structure in the southern section of the site, the sampling point numbers are sufficient for this investigation.

The justification of the sampling point regime for the assessment was based on the investigator's knowledge, operational requirements, experience, history of the Site, and the requirements in the *Department of Environment and Conservation (NSW) "Guidelines for Assessing Former Orchards and Market Gardens".* All historical investigations and anecdotal evidence supported the sampling approach adopted and provided for samples to be collected in a manner that ensured an unbiased statistical. All the AECs were based on the

extensive market garden history and site observations involved the investigation of heavy metals and OCP/OPP as primary targets.

8.4 Analytical Program

Samples were to be analysed to provide information for the characterisation of the most likely contaminated soils. This allowed the assessment of soils samples against the Site Acceptance Criteria. All analyses were to be carried out by NATA certified laboratory Eurofins MGT in accordance with Chain of Custody (CoC) instructions supplied by Geotesta. The samples were checked for heavy metals and OCP/OPP. Summary of the soil laboratory analyses is presented in Table 7. The details of sample types and depths are provided in Table 8.

Table 7: Summary of soil laboratory program

COC	Number of samples analysed
Heavy Metals[2]	20
Suite B14[3]	20

Notes:

[1]Heavy metals: **Arsenic, cadmium, Chromium, copper, lead, Mercury, Nickel, Zinc**

[2]Suite B14: **OCP and OPP**

Table 8: Samples Depth and Requested Lab Tests

Sample ID (BH)	Depth (m)	Sample Type	HM[1]	Suite B14[2]
Di1	0.15	Silty Clay	✗	✗
Di2	0.15	Silty Clay	✗	✗
Di3	0.15	Silty Clay	✗	✗
Di4	0.15	Silty Clay	✗	✗
Di5	0.15	Topsoil	✗	✗
Di6	0.15	Silty Clay	✗	✗
Di7	0.15	Silty Clay	✗	✗
Di8	0.15	Silty Clay	✗	✗
Di9	0.15	Silty Clay	✗	✗
Di10	0.10	Topsoil	✗	✗
Di11	0.15	Topsoil	✗	✗
Di12	0.15	Silty Clay	✗	✗
Di13	0.15	Silty Clay	✗	✗
Di14	0.10	Topsoil	✗	✗
Di15	0.15	Topsoil	✗	✗
Di16	0.15	Silty Clay	✗	✗
Di17	0.15	Topsoil	✗	✗
Di18	0.15	Silty Clay	✗	✗
Di19	0.15	Silty Clay	✗	✗
Di20	0.15	Topsoil	✗	✗

[1]HM: Heavy metal
[2]Suite B14: OCP, OPP

8.5 Visual Inspection

During the sampling works for the site contamination investigation, a visual inspection was conducted to ensure no signs of contamination were visible, or odours encountered within the ground surfaces. Due to extensive grass cover an inspections for ACM could not be conducted effectively, Geotesta recommends the requirement for an Unexpected Finds Protocol (UFP) when the site is cleared.

8.6 Soil Logging

Boreholes were logged by an experienced environmental/geotechnical engineer in accordance with Standard procedures. The boreholes logs are attached to this report in Appendix D.

9. SAMPLING QUALITY ASSURANCE AND QUALITY CONTROL

9.1 Sampling Procedures

General soil sampling procedures included wearing of plastic disposable gloves when handling sampling equipment and soil and changed between collections of samples. All sampling equipment was clean prior to commencement of sampling. Equipment for soil sampling included a vehicle-mounted auger and a stainless-steel sampling shovel. All equipment was decontaminated between samplings. The following measures have been utilized during the sampling to achieve the sampling quality controls.

9.2 Sample Containers

Soil samples collected during the investigation were placed immediately into laboratory prepared glass jars with Teflon lids and plastic bags. Standard identification labels were adhered to each individual container and labelled according to depth, date, sampling team

9.3 Sample Tracking and Identification

All samples were identified with a unique sample number and all sampling details were included on the sample label and were reproduced on the field sample log and chain of custody records. Samples were received at the laboratory in accordance with NEPM requirements. Refer to Appendix E for the Sample Receipt Advice.

9.4 Decontamination

All equipment used in the sampling program, which included a handheld auger and a stainless-steel sampling shovel were decontaminated prior to use and between samples to prevent cross contamination. Decontamination of equipment involved the following procedures:

- Cleaning equipment in potable water to remove gross contamination;

- Cleaning in a solution of Decon-90TM;

- Rinsing in clean demineralised water then wiping with clean lint free cloths.

9.5 Sample Transport

All samples were packed in ice from the time of collection and were transported under chain of custody from the Site to Eurofins MGT Services in Lane Cove. During the project, the laboratory reported that all the samples arrived intact, with appropriate preservation medium and were analysed within their relative holding times for the respective analytes.

9.6 Analytical QA/QC Procedures

Quality control is achieved by utilising NATA accredited laboratories, using standard methods supported by internal duplicates, checking of high, abnormal, or otherwise anomalous results against background and other chemical results for the sample concerned.

Quality assurance is achieved by confirming field or anticipated results based upon the comparison of field observations with laboratory results. Two duplicate samples (D1 & D2) were taken for one (1) day of sampling and were duplicate samples of parent samples Di1 and Di20, respectively.

A Field Blank was taken as part of the Quality assurance to ensure no cross-contamination has taken place.

In addition, the laboratory undertakes additional duplicate analysis as part of their internal quality assurance program. Chain of Custody documentations were used to ensure that sample tracking and custody can be cross-checked at any point in the transfer of samples from the field to hand-over to the laboratory.

10. ASSESSMENT CRITERIA

The respective soil Site Assessment Criteria (SAC) for the project are provided in the following sections. The *National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), NEPC 2013,* Canberra (referred to as ASC NEPM 2013) was used to determine the SAC.

10.1 Heavy metals and OCP/OPP

Table 9 presents HILs for heavy metals and pesticides (OCP/OPP). It is obtained from Tables 1A(1) in *Schedule B1 of NEPM (2013)* for Residential A.

Table 9: Site Assessment Criteria for Soils (mg/kg)

Analytes	HILs-Residential A[1]
Arsenic	100
Cadmium	20
Chromium (VI)	100
Copper	6000
Lead	300
Mercury (inorganic)	40
Nickel	400
Zinc	7400
Pesticides:	
Aldrin/Dieldrin	6
Chlordane	50
DDT+DDE+DDD	240
Chlorpyrifos	160
Endosulfan[5]	270
Endrin	10
Heptachlor	6
HCB	10
Methoxychlor	300
Toxaphene	20

1- Criteria adopted for residential areas of the Site

10.2 Ecological Investigation Levels

Ecological Investigation Levels (EILs) were also used to assess the site to confirm suitability for the proposed residential land use.

The current version of the NEPM (2013) specifies default EILs for arsenic, lead, DDT and naphthalene.

NEPM (2013) specifies a methodology for the derivation of site-specific EILs for nickel, chromium III, copper and zinc. The derivation process requires determination of ambient background concentrations (ABC) and added contaminant limits (ACLs) for these chemicals, and the EIL is then calculated as the ABC plus the ACL.

Sample# EIL2 soil properties were measured for site-specific derivation of ACLs for Cr(III), Cu, Ni and Zn. Soil properties include:

- pH, Cation Exchange Capacity (CEC) and % Clay.

Table 10 presents EILs derived from the measured soil properties in sample# HIL2 for aged soils in Urban Residential/Public Open Space, utilising ABC levels derived from the average laboratory results of samples# HIL1 and HIL2.

Table 10: NEPM (2013) EILs for Urban Residential and Public Open Spaces

Analyte	pH	CEC^	Clay Content*	ABC	ACL	EIL
Zinc	6.6	8.7	-	87	400	487
Copper	6.6	8.7	-	21	235	256
Chromium (III)	-	-	13 %	18	400	418
Nickel	-	8.7	-	11	170	181
Lead	-	-	-	26	1100	1,126
Arsenic	-	-	-	-	-	100
DDT	-	-	-	-	-	180
Naphthalene	-	-	-	-	-	170

Note(s):

1. ABC = ambient background concentrations, ACL = added contaminant limits, ESL = ecological screening levels, CEC = cation exchange capacity;

11. RESULTS

11.1 Subsurface Conditions

A summary of sub-surface soil conditions encountered in the site is presented below:

Based on the fieldwork results, an approximately 0.1 m–0.2 m topsoil layer was observed in all boreholes.

The material below the topsoil material was firm to stiff Silty CLAY. It was found between 0.1 m and up to 0.9 m in depth during the geotechnical engineering site investigation.

Bedrock was encountered in borehole (Di1) at depths varying between 0.9 m – 2.5 m and comprised an extremely to highly weathered and very low strength shale. The bed rock encountered in the Borehole# Di1 was drilled for the geotechnical investigation.

Groundwater was not encountered within any boreholes.

11.2 Laboratory Analytical Results

Selected soil samples were analysed for the COPCs. A summary of analytical results follows. The lab test reports are presented in Appendix E.

11.2.1 Heavy Metals (HM)

A total of twenty (20) soil samples were analysed for heavy metals. The results of the laboratory results for the heavy metal components are presented in Table 11. The 95% UCL was calculated as a statistical analysis of the heavy metal detections including minimum, maximum and average along with the adopted SAC, and is shown in Table 12.

Table 11: Heavy Metal Detections in soil samples (mg/kg)

	Sample Depth (m)	Arsenic (As)	Cadmium (Cd)	Chromium (total) (Cr)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Zinc (Zn)
Di1	0.15	**17**	< 0.4	**26**	**44**	**33**	< 0.1	**11**	**62**
Di2	0.15	**12**	< 0.4	**26**	**45**	**26**	< 0.1	**8.7**	**48**
Di3	0.15	**14**	< 0.4	**36**	**44**	**30**	< 0.1	**11**	**63**
Di4	0.15	**8.8**	< 0.4	**25**	**46**	**24**	< 0.1	**11**	**56**
Di5	0.15	**16**	< 0.4	**28**	**39**	**29**	< 0.1	**8.8**	**54**
Di6	0.15	**13**	< 0.4	**25**	**63**	**27**	< 0.1	**8.5**	**48**
Di7	0.15	**16**	< 0.4	**29**	**43**	**36**	< 0.1	**11**	**80**
Di8	0.15	**11**	< 0.4	**28**	**43**	**25**	< 0.1	**11**	**56**
Di9	0.15	**12**	< 0.4	**26**	**33**	**21**	< 0.1	**10**	**52**
Di10	0.10	**13**	< 0.4	**25**	**55**	**25**	< 0.1	**9.7**	**75**
Di11	0.15	**11**	< 0.4	**27**	**38**	**23**	< 0.1	**9.9**	**52**
Di12	0.15	**7.3**	< 0.4	**44**	**43**	**20**	< 0.1	**27**	**75**
Di13	0.15	**15**	< 0.4	**26**	**42**	**26**	< 0.1	**10**	**61**
Di14	0.10	**12**	< 0.4	**26**	**52**	**29**	< 0.1	**10**	**97**
Di15	0.15	**24**	< 0.4	**24**	**54**	**45**	< 0.1	**14**	**140**
Di16	0.15	**11**	< 0.4	**33**	**41**	**36**	< 0.1	**11**	**84**
Di17	0.15	**16**	< 0.4	**27**	**45**	**23**	< 0.1	**13**	**59**
Di18	0.15	**20**	< 0.4	**25**	**47**	**53**	< 0.1	**13**	**170**
Di19	0.15	**7.9**	< 0.4	**18**	**61**	**28**	< 0.1	**10**	**110**
Di20	0.15	**8.5**	< 0.4	**22**	**100**	**23**	< 0.1	**11**	**99**

Note- Chromium is total chromium and includes trivalent and hexavalent chromium.

Table 12: Statistical analysis of Heavy Metal Detections in Soil samples (mg/kg)

	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn
Samples count[1]	20	20	20	20	20	20	20	20
Minimum	7.3	-[3]	18	33	20	-[3]	8.5	48
Maximum	**24**	-[3]	**44**	**100**	**53**	-[3]	**27**	**170**
Average	13.3	-[3]	27.3	48.9	29.1	-[3]	11.5	77.1
Standard Deviation[2]	5.02	-[3]	2.07	21.13	7.90	-[3]	1.90	31.99
95% Confidence Level[2]	4.65	-[3]	1.91	19.54	7.31	-[3]	1.76	29.58
NEPM 2013 HIL	**100**	**20**	**100**	**6,000**	**300**	**40**	**400**	**7,400**
NEPM 2013 EIL	**100**	**--**	**418**	**256**	**1,126**	**--**	**181**	**487**
No. of HIL Exceedance	0	0	0	0	0	0	0	0

[1] Note: The higher concentration within the Parent / Duplicate pair was adopted within the results table

[2] Note: 95% Confidence Level calculated within the Topsoil Horizon

[3] - Insufficient data points

All detected concentrations of heavy metals were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC) – Health Investigation Levels (HIL A) and Ecological Investigation Levels (EIL).

11.2.2 Organochlorine Pesticides / Organophosphorus Pesticides (OCP/OPP)

A total of twenty (20) samples were analysed for a range of Organochlorine and Organophosphorus pesticides. Tables 13 and 14 presents the OCP/OPP results.

Table 13: OCP/OPP (Pesticides) Detections in soil samples (mg/kg)

	Sample Depth (m)	DDT+DDE+ DDD	Aldrin and Dieldrin	Endrin	Chlordane Total	Toxaphene	Chlorpyrifos
Di1	0.15	**0.06**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di2	0.15	**0.17**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di3	0.15	< 0.4	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di4	0.15	**0.14**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di5	0.15	**0.12**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di6	0.15	**0.41**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di7	0.15	**0.27**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di8	0.15	**0.25**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di9	0.15	< 0.05	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di10	0.10	**0.15**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di11	0.15	**0.24**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di12	0.15	**0.27**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di13	0.15	**0.06**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di14	0.10	**0.05**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di15	0.15	**0.35**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di16	0.15	**0.24**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di17	0.15	< 0.1	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di18	0.15	**0.48**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di19	0.15	**0.09**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
Di20	0.15	**0.13**	< 0.05	< 0.05	< 0.1	< 0.5	< 0.2
NEPM 2013 HIL		**240**	**6**	**10**	**50**	**20**	**160**
No. of HIL Exceedance		0	0	0	0	0	0

Table 14: OCP (Pesticides) Detections in soil samples (mg/kg)

	Sample Depth (m)	Endosulfan[1]	HCB	Heptachlor	Methoxychlor
Di1	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di2	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di3	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di4	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di5	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di6	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di7	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di8	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di9	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di10	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di11	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di12	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di13	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di14	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di15	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di16	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di17	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di18	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di19	0.15	< 0.15	< 0.05	< 0.05	< 0.05
Di20	0.15	< 0.15	< 0.05	< 0.05	< 0.05
NEPM 2013 HIL		**270**	**10**	**6**	**300**
No. of HIL Exceedance		0	0	0	0

Sum of Endosulfan I, Endosulfan II and Endosulfan sulphate

All detected concentrations of OCP/OPP were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC).

11.2.3 Asbestos

Due to extensive grass cover, an inspection for ACM could not be conducted effectively, Geotesta recommends the requirement for an Unexpected Finds Protocol (UFP) when the site is cleared.

11.3 Evaluation Analytical Quality Assurance

11.3.1 Duplicate Samples

Two (2) duplicate samples were recovered to analyse the precision and reproducibility of the conducted analysis. The duplicate samples were labelled with an identification number not known to the laboratory and analysed in the same way as the primary samples. The duplicate sample is analysed by calculating the relative percentage difference (RPD) of the laboratory results for the duplicate and corresponding primary sample. The RPD is a method of normalising two values and allows a comparison between values.

An acceptable RPD of 30% was adopted for this assessment, however, in circumstances where one or both detected concentrations within the duplicate pair were within five (5) times the LOR, an RPD of 100% was considered acceptable.

Upon analysis, the following RPD was in excess of the acceptance criteria (refer to Tables 15 and 16):

- Copper within samples# Di20 and D2 – (RPD of 43.9 % > 30%);

In regard to these RPD exceedances, variations between primary and duplicate samples are expected due to the heterogeneous nature of the soils. As a conservative measure, the higher concentration was adopted as the guiding value in order to minimise the potential to underestimate the level of contamination present. All adopted contaminant concentrations were < HIL/ESL A.

Table 15. Relative Percentage Difference against Di1 and D1

Analyte	LOR	Concentrations		RPD (%)
		Di1	D1	
Arsenic	2	**17**	**17**	**0.0**
Cadmium	0.4	<0.4	<0.4	-
Chromium	5	**26**	**26**	**0.0**
Copper	5	**42**	**44**	**4.7**
Lead	5	**33**	**32**	**3.1**
Mercury	0.1	<0.1	<0.1	-
Nickel	5	**11**	**11**	**0.0**
Zinc	5	**56**	**62**	**10.2**

*Adapted from Eurofins Analytical Report **832883-S (Appendix E)***

Notes: LOR = Limit of Reporting; Asbestos measurement = Detected (D) / not detected (ND). All other analytes measured as mg/kg. *Shaded = RPD exceedance where concentrations are greater than 30%, in circumstances where one or both of the detected concentrations within the duplicate pair were within five (5) times the LOR, an RPD of 100% was considered acceptable.*

Table 16. Relative Percentage Difference against Di20 and D2

Analyte	LOR	Concentrations		RPD (%)
		Di20	D2	
Arsenic	2	**8.5**	**8.4**	**1.2**
Cadmium	0.4	<0.4	<0.4	-
Chromium	5	**19**	**22**	**14.6**
Copper	5	**100**	**64**	**43.9**
Lead	5	**23**	**23**	**0.0**
Mercury	0.1	<0.1	<0.1	-
Nickel	5	**11**	**10**	**9.5**
Zinc	5	**95**	**99**	**4.1**

*Adapted from Eurofins Analytical Report **832883-S (Appendix E)***

Notes: LOR = Limit of Reporting; Asbestos measurement = Detected (D) / not detected (ND). All other analytes measured as mg/kg. *Shaded = RPD exceedance where concentrations are greater than 30%, in circumstances where one or both of the detected concentrations within the duplicate pair were within five (5) times the LOR, an RPD of 100% was considered acceptable.*

The RPD for the duplicate samples analysed by the primary laboratory (Eurofins MGT) were between 0.0 % and 43.9 %, with only one (1) exceedance for copper within samples# Di20 / D2. RPD values could not be determined for Cadmium and Mercury as they were below the laboratory reporting limits. Based on the laboratory QA/QC and the duplicate results the data is considered suitable for use in this environmental assessment of the site.

The internal laboratory QA/QC results which are presented in the laboratory certificates are considered acceptable based on the duplicate and control samples analysed. The overall results suggest that the laboratory analysis carried out is reliable for this assessment.

11.3.2 Field Blank

The field blank sample assesses the potential for the primary sample to be affected by external and environmental factors during transport between the site and laboratory. The field blank sample consists of blank water which is transported to and from the site and laboratory with the primary samples.

Upon analysis of the field blank sample, no concentrations of BTEX or heavy metals were detected above the Limit of Reporting (LOR). As such, there is a minimal potential for cross-contamination to have occurred during the field and trip handling procedures. Refer to Tables 17 and 18.

Table 17. Field Blank Results (mg/L)

Sample	C6-C10	C10-C16	C16-C34	C34-C40
FB1	<0.02	<0.05	<0.1	<0.1
No Detection above LOR				

*Adapted from Eurofins Analytical Report **832883-W (Appendix E)***

Table 18. Field Blank Results (mg/L)

Sample	Arsenic (As)	Cadmium (Cd)	Chromium (Total) (Cr)	Copper (Cu)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Zinc (Zn)
FB1	< 0.001	< 0.0002	< 0.001	< 0.001	<0.001	<0.0001	<0.001	<0.005

*Adapted from Eurofins Analytical Report **832883-W (Appendix E)***

11.3.3 Laboratory QAQC

The laboratory internal QA/QC Reports provided in Appendix E indicated that the appropriate laboratory QA / QC procedures and rates were undertaken for contamination studies, and that:

- Laboratory blank samples were free of contamination;
- Matrix spike recoveries were within the control limits;
- Laboratory duplicate RPDs exceeded the control limits for OCPs/OPP, Eurofins quoted laboratory code Q15[1]; and
- Surrogates and laboratory control samples were within the laboratories acceptable range.

[1] Q15: The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

11.3.4 Conceptual Site Model

Based on the results of the Preliminary Site Investigation, including sampling and analysis results, carried out on the site, the Conceptual Site Model (CSM) has been updated and presented in Table 19.

Table 19 – Updated Conceptual Site Model Post Assessment

AEC	COPC	Likelihood of Contamination	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential mechanisms of exposure	Sampling Completed	Potential & Complete Exposure Pathways
A – Market Garden, Orchards & Agricultural Grazing • Market gardens and orchards used for agricultural purposes may involve fertiliser use, chemical pesticides and herbicide use that may introduce heavy metals, pesticide chemicals into the soil and surface water.	HM and OCP/OPP	Medium-High	• Spraying of pesticides	• Surface soils • Surface water • Aesthetics • Groundwater	• Future site workers and visitors • Site labourers/workers • Residents of adjacent properties • Trespassers	• Direct dermal contact with contaminated soil and/or surface water • Ingestion of contaminated soil • Inhalation of contaminated soil (as dust) • Leaching of soil contaminants to surface water and/or groundwater	Di1 to Di20	• No contamination identified above the SAC was identified in the soil samples in the agricultural usage land, therefore the risk is acceptable for the current and future site users, future construction workers, and soil biota/plants and transitory wildlife. • Contaminant concentrations of concern were below the SAC, therefore the risk is acceptable for the exposure pathway for surface water and groundwater.

12. DISCUSSION

Soil Contamination Summary

Based on the historical review, background review and site inspection, the site was used for agricultural activities from as early as 1947. Small dwelling / structure was situated on the southern boundary, until it was demolished 1978 – 1984 (latest). The site since 1985 has been primarily used as a market garden until 2005. From 2009 to the present date, the site appeared to be vacant land, as was observed during site inspection.

During the onsite investigation, the site was vacant land with extensive vegetation (grass) coverage that had been unkept, the former market garden posed the potential concern of contamination from heavy metals, OCP/OPP and asbestos.

A summary of the laboratory result is presented as the following:

- All detected concentrations of heavy metals were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC) – Health Investigation Levels (HIL A) and Ecological Investigation Levels (EIL).
- All detected concentrations of OCP/OPP were reported by the laboratory to have concentrations within the adopted Site Assessment Criteria (SAC).

13. CONCLUSIONS AND RECOMMENDATIONS

A Preliminary Site Investigation of 495 Fourth Avenue, Austral NSW 2179 was undertaken by Geotesta to investigate the likelihood of the presence and extent of contamination on the site.

Based on the assessment undertaken, the following conclusions and recommendations can be made:

- All the contaminant concentrations of interest that were analysed were found to be within the site assessment criteria (SAC).
- The conducted Preliminary Site Investigation's limited soil sampling and analysis program indicated a **low** risk of soil and groundwater contamination. It is the opinion of Geotesta Pty Ltd that the site is suitable for the proposed low density residential development pending the results of an additional Data Gap Contamination Assessment.

  - Due to the existence of a data-gap in this investigation, a further Data Gap Assessment in the vicinity of the footprint of the former structure/dwelling located on the southern boundary is required to address the potential area of concern identified in the AECs by determining the existence of any asbestos contamination. The Data Gap Assessment findings will be issued as an Addendum Letter to this report.

DOCUMENT CONTROL

Date	Version	Report Prepared By:	Report Reviewed and issued by:
22 November 2021	Rev (1)	**Alex Gibson** BSc (Hons) MSc MIEAust Environmental Engineer	**Dr. Mohammad Hossein Bazyar** BEng MEng Ph.D MIEAust CPEng NER Senior Environmental Consultant
08 December 2021	Rev (2)	**Alex Gibson** BSc (Hons) MSc MIEAust Environmental Engineer	**Dr. Mohammad Hossein Bazyar** BEng MEng Ph.D MIEAust CPEng NER Senior Environmental Consultant
01 September 2022	Rev (3)	**Victor Kirpichnikov** MEnv Studies, Bsc (Hons), WHS Cert IV Senior Environmental Consultant	**Victor Kirpichnikov** MEnv Studies, Bsc (Hons), WHS Cert IV Senior Environmental Consultant

REFERENCES

NSW Department of Mineral Resources, (1991) Penrith 1:100,000 Geological Sheet 9030.

Bureau of Meteorology (2017), www.bom.gov.au.

EPA NSW, http://www.epa.nsw.gov.au/prclmapp/aboutregister.aspx.

NEPC (1999, amended 2013) National Environmental Protection (Assessment of Site Contamination) Measure (ASC NEPM, 1999 amended 2013).

NSW Department of Environment & Heritage (NSW soil and land information), www.environment.nsw.gov.au.

NSW EPA (2014), Waste Classification Guidelines, Part 1: Classifying waste.

NSW EPA (2020) Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Land.

Standards Australia (2005) AS4482.1 2nd Edition: Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil – Part 1: Non-Volatile and Semi-Volatile Compounds.

NSW EPA (2017) 3rd Ed. Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme

WA DoH (2009) Guidelines for the Assessment, Remediation and Management of Asbestos-contaminated Sites in Western Australia.

State Environmental Planning Policy No 55 (1979), Environmental Planning and Assessment Act 1979.

Standards Australia, 2005. Guide to the sampling and Investigation of Potentially Contaminated Soil, Part 1: Non-volatile and Semi-volatile compounds. AS 4482.1

Planning Certificate Under Section 10.7, Certificate No: 537, 495 Fourth Avenue, Austral NSW 2179, 28 July 2021.

Eurofins Environment Testing Pty Ltd, 15 October 2021, Certificate of Analysis 832883-S, prepared for Geotesta Pty Ltd

Eurofins Environment Testing Pty Ltd, 15 October 2021, Certificate of Analysis 832883-W, prepared for Geotesta Pty Ltd

Eurofins Environment Testing Pty Ltd, 25 February 2022, Certificate of Analysis 866757-S-V2, prepared for Geotesta Pty Ltd

Information about this report

The report contains the results of a contamination investigation conducted for a specific purpose and client. The results should not be used by other parties, or for other purposes, as they may contain neither adequate nor appropriate information. In particular, the investigation does not cover contamination issues unless specifically required to do so by the client.

Test Hole Logging

The information on the test hole logs (boreholes, test pits, exposures etc.) is based on a visual and tactile assessment, except at the discrete locations where test information is available (field and/or laboratory results). The test hole logs include both factual data and inferred information.

Groundwater

Unless otherwise indicated, the water levels presented on the test hole logs are the levels of free water or seepage in the test hole recorded at the given time of measuring. The actual groundwater level may differ from this recorded level depending on material permeability (i.e. depending on response time of the measuring instrument). Further, variations of this level could occur with time due to such effects as seasonal, environmental and tidal fluctuations or construction activities. Confirmation of groundwater levels, phreatic surfaces or piezometric pressures can only be made by appropriate instrumentation techniques and monitoring programmes.

Interpretation of Results

The discussion or recommendations contained within this report normally are based on a site evaluation from discrete test hole data. Generalized, idealized or inferred subsurface conditions (including any geotechnical cross-sections) have been assumed or prepared by interpolation and/or extrapolation of these data. As such these conditions are an interpretation and must be considered as a guide only.

Change in Conditions

Local variations or anomalies in the generalized ground conditions do occur in the natural environment, particularly between discrete test hole locations. Additionally, certain design or construction procedures may have been assumed in assessing the soil-structure interaction behaviour of the site. Furthermore, conditions may change at the site from those encountered at the time of the geotechnical investigation through construction activities and constantly changing natural forces.

Any change in design, in construction methods, or in ground conditions as noted during construction, from those assumed or reported should be referred to GEOTESTA for appropriate assessment and comment.

Environmental Verification

Verification of the environmental/contamination assumptions and/or model is an integral part of the design process-investigation, construction verification, and performance monitoring. Variability is a feature of the natural environment and, in many instances,

verification of soil or rock quality, or foundation levels, is required. There may be a requirement to extend foundation depths, to modify a foundation system or to conduct monitoring as a result of this natural variability. Allowance for verification by geotechnical personnel accordingly should be recognized and programmed during construction.

Reproduction of Reports

Where it is desired to reproduce, the information contained in our contamination report, or other technical information, for the inclusion in contract documents or engineering specification of the subject development, such reproductions should include at least all of the relevant test hole and test data, together with the appropriate standard description sheets and remarks made in the written report of a factual or descriptive nature. Reports are the subject of copyright and shall not be reproduced either totally or in part without the express permission of Geotesta.

Appendix A

Diagrams

Figure 2: Soil Samples Location

Appendix B

Aerial Photographs

Aerial Photo 1947

Aerial Photo 1965

Aerial Photo 1975

Aerial Photo 1978

Aerial Photo 1984

Aerial Photo 1986

Aerial Photo 1991

Aerial Photo 1998

Aerial Photo 2000

Aerial Photo 2004

Aerial Photo 2005

Aerial Photo 2007

Aerial Photo 2009

Aerial Photo 2011

Aerial Photo 2014

Aerial Photo 2015

Aerial Photo 2016

Aerial Photo 2018

Aerial Photo 2019

Aerial Photo 2020

Aerial Photo 2021

Appendix C

Planning Certificate Under Section 10.7

LIVERPOOL CITY COUNCIL

PLANNING CERTIFICATE UNDER SECTION 10.7
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Ref.: NE996:112030
Ppty: 168726

Cert. No.: 537

Applicant:
GEOTESTA PTY LTD
7 BUSINESS PARK DRV
NOTTING HILL VIC 3168

Receipt No.: 4961351
Receipt Amt.: 53.00
Date: 28-Jul-2021

The information in this certificate is provided pursuant to Section 10.7(2) of the Environmental Planning and Assessment Act (EP&A Act) 1979, as prescribed by Schedule 4 of the Environmental Planning and Assessment Regulation (EP&A Regulation) 2000. The information has been extracted from Council's records, as they existed at the date listed on the certificate. Please note that the accuracy of the information contained within the certificate may change after the date of this certificate due to changes in Legislation, planning controls or the environment of the land.

The information in this certificate is applicable to the land described below.

Legal Description: **PART LOT 12 DP 1103748**

Street Address: **495 FOURTH AVENUE, AUSTRAL NSW 2179**

Note: Items marked with an asterisk (*) may be reliant upon information transmitted to Council by a third party public authority. The accuracy of this information cannot be verified by Council and may be out-of-date. If such information is vital for the proposed land use or development, applicants should instead verify the information with the appropriate authority.

Note: Commonly Used Abbreviations:
LEP: Local Environmental Plan
DCP: Development Control Plan
SEPP: State Environmental Planning Policy
EPI: Environmental Planning Instrument

1. Names of relevant planning instruments and DCPs

(a) The name of each EPI that applies to the carrying out of development on the land is/are listed below:

LEPs:

Not Applicable

SEPPs*:

SEPP No. 33 – Hazardous and Offensive Development
SEPP No. 50 – Canal Estate Development
SEPP No. 55 – Remediation of Land
SEPP No. 65 – Design Quality of Residential Flat Development
SEPP (Building Sustainability Index: BASIX) 2004
SEPP No. 70 – Affordable Housing (Revised Schemes)
SEPP (Infrastructure) 2007
SEPP (Mining, Petroleum Production and Extractive Industries) 2007
SEPP (Miscellaneous Consent Provisions) 2007
SEPP (State and Regional Development) 2011
SEPP (Education Establishments and Child Care Facilities) 2017
SEPP (Vegetation in Non-Rural Areas) 2017
SEPP (Concurrences and Consents) 2018
SEPP (Primary Production and Rural Development) 2019
SEPP (Koala Habitat Protection) 2019
SEPP (Western Sydney Aerotropolis) 2020
SEPP No 19 – Bushland in Urban Areas
SEPP No 21 – Caravan Parks
SEPP (Exempt and Complying Development Codes) 2008
SEPP (Affordable Rental Housing) 2009
SEPP (Sydney Region Growth Centres) 2006
SEPP No 64 – Advertising and Signage
SEPP (Housing for Seniors or People with a Disability) 2004

Deemed SEPPs*:

SREP No 20 – Hawkesbury – Nepean River (No. 2 – 1997)

(b) The name of each draft EPI, or Planning Proposal (which has been subject to community consultation).

Draft LEPs:

N/A

Draft SEPPs*:

Draft SEPP (Competition) 2010

(c) The name of each DCP that applies to the carrying out of development on the land.

Liverpool Growth Centre Precincts DCP

2. Zoning and land use under relevant LEPs and /or SEPPs

This section contains information required under subclauses 2 and 2A of Schedule 4 of the EP&A Regulation 2000. Subclause 2 of the regulation requires Council to provide information with respect to zoning and land-use in areas zoned by, or proposed to be zoned by, a LEP. Subclause 2A of Schedule 4 of the regulation requires Council to provide information with respect to zoning and land-use in areas which are zoned by, or proposed to be zoned by, the SEPP (Sydney Region Growth Centres) 2006. The land use and zoning information under any EPI applying to the land is given below.

(a) Name of zone, and the EPI from which the land zoning information is derived.

R3 Medium Density Residential - SEPP (Sydney Region Growth Centres) 2006

(b) The purposes for which development may be carried out within the zone without the need for development consent

Home-based child care; Home occupations

(c) The purposes for which development may not be carried out within the zone except with development consent

Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Child care centres; Community facilities; Dual occupancies; Dwelling houses; Group homes; Manor homes; Neighbourhood shops; Places of public worship; Residential flat buildings; Roads; Secondary dwellings; Semi-detached dwellings; Seniors housing; Studio dwellings; Any other development not specified in item (b) or (d)

(d) The purposes for which the instrument provides that development is prohibited within the zone

Agriculture; Air transport facilities; Airstrips; Amusement centres; Boat repair facilities; Boat sheds; Business premises; Caravan parks; Cemeteries; Charter and tourism boating facilities; Correctional centres; Crematoria; Depots; Electricity generating works; Entertainment facilities; Extractive industries; Freight transport facilities; Function centres; Helipads; Highway service centres; Home occupations (sex services); Industries; Information and education facilities; Marinas; Moorings; Mortuaries; Office premises; Passenger transport facilities; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Restricted premises; Retail premises; Rural supplies; Service stations; Sex services premises; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Vehicle sales or hire premises; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Wholesale supplies

(a) Name of zone, and the EPI from which the land zoning information is derived.

B1 Neighbourhood Centre - SEPP (Sydney Region Growth Centres) 2006

(b) The purposes for which development may be carried out within the zone without the need for development consent

Home-based child care; Home occupations

(c) The purposes for which development may not be carried out within the zone except with development consent

Amusement centres; Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Business premises; Child care centres; Community facilities; Drainage; Educational establishments; Environmental facilities; Environmental protection works; Flood mitigation works; Food and drink premises; Home businesses; Home industries; Hostels; Hotel or motel accommodation; Kiosks; Medical centres; Neighbourhood shops; Office premises; Passenger transport facilities; Places of public worship; Public administration buildings; Recreation areas; Roads; Service stations; Serviced apartments; Shops; Shop top housing; Veterinary hospitals

(d) The purposes for which the instrument provides that development is prohibited within the zone

Any development not specified in item (b) or (c).

(a) Name of zone, and the EPI from which the land zoning information is derived.

RE1 Public Recreation - SEPP (Sydney Region Growth Centres) 2006

(b) The purposes for which development may be carried out within the zone without the need for development consent

Environmental protection works

(c) The purposes for which development may not be carried out within the zone except with development consent

Building identification signs; Business identification signs; Child care centres; Community facilities; Drainage; Environmental facilities; Flood mitigation **works; Information and education facilities; Kiosks; Markets; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Restaurants; Roads; Take away food and drink premises; Water recreation structures; Waterbodies (artificial)**

(d) The purposes for which the instrument provides that development is prohibited within the zone

Any development not specified in item (b) or (c)

Note: Schedule 1 of an EPI and Clause 53 of the SEPP (Western Sydney Aerotropolis SEPP) 2020 permits certain development which would otherwise be prohibited within a zone. Any clause applying to the land is shown below.

(e) If a dwelling house is a permitted use, are there any principal development standards applying to the land that fix minimum land dimensions for the erection of a dwelling house?

No

(f) Does the land include or comprise critical habitat?

No

(g) Is the land is in a conservation area (however described):

No

(h) Is there an item of environmental heritage (however described) situated on the land

No

3. Complying development

The information below outlines whether complying development is permitted on the land as per the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18(1) (c3) and 1.19 SEPP of the (Exempt and Complying Development Codes) 2008 only. The table does not specify whether any code applies to the land; applicants should read the full extent of the code with their building certifier, solicitor, or other professional to determine whether any code applies to the land.

The first column identifies the code(s). The second column describes the extent of the land in which exempt and complying development is permitted, as per the clauses above, for the code(s) given to the immediate left. The third column indicates the reason as to why exempt and complying development is prohibited on some or all of the land, and will be blank if such development is permitted on all of the land.

Code	Extent of the land for which development is permitted:	The reason(s) as to why development is prohibited:

Code	Extent of the land for which development is permitted:	The reason(s) as to why development is prohibited:
Housing Code, Rural Housing Code, Greenfield Housing Code and Low Rise Medium Density Housing Code	**Part**	Part of the land is identified as being **reserved for a public purpose** (Clause 1.19(1)(b) or Clause 1.19(5)(b))
Commercial and Industrial (New Buildings and Additions) Code	**Part**	Part of the land is identified as being **reserved for a public purpose** (Clause 1.19(1)(b) or Clause 1.19(5)(b))
General Development Code, Container Recycling Facilities Code, Fire Safety Code, Housing Alterations Code, Commercial and Industrial Alterations Code, Subdivisions Code, and Demolition Code	**All**	

Note: Despite information in the table above, Complying development codes do not apply and certain Exempt Codes do not apply or are modified in areas subject to land-use zoning under the SEPP (Western Sydney Aerotropolis) 2020.

Note: If council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement below will describe that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

Nil

4. Coastal protection*

Has the Department of Finance, Services and Innovation notified Council of the land being affected by 38 or 39 of the Coastal Protection Act, 1979?

No

4A. Certain information relating to beaches and coasts*

(a) Has an order has been made under Part 4D of the Coastal Protection Act 1979 on the land (or on public land adjacent to that land)?

No

(b) Has Council been notified under section 55X of the Coastal Protection Act 1979 that temporary coastal protection works have been placed on the land (or on public land adjacent to that land), and if works have been so placed, is council is satisfied that the works have been removed and the land restored in accordance with that Act?

Not applicable

4B. Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works*

Has the owner (or any previous owner) of the land consented, in writing, that the land is subject to annual charges under section 496B of the Local Government Act 1993 for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act)?

No

5. Mine subsidence*

Is the land a proclaimed to mine subsidence district within the meaning of the Coal Mine Subsidence Compensation Act 2017?

No

6. Road widening and road realignment

Is the land is affected by any road widening or road realignment under:

(a) Division 2 of Part 3 of the Roads Act 1993?*

No

(b) An EPI?

No

(c) A resolution of the council?

No

7. Council and other public authority policies on hazard risk restrictions

The following table lists hazard/risk policies that have been adopted by Council (or prepared by another public authority and subsequently adopted by Council). The right-most column indicates whether the land is subject to any controls from those policies, but it does not confirm if that hazard/risk is present on the land..

Hazard/Risk	Adopted Policy	Does this hazard/risk policy apply to the land?
Landslip hazard	Western Sydney Aerotropolis DCP 2020	**No**
Bushfire hazard	Liverpool DCP 2008	**No**
	Liverpool Growth Centre Precincts DCP*	**Yes**
	Edmondson Park South DCP 2012	**No**
	Western Sydney Aerotropolis DCP 2020	**No**
	Planning for Bushfire Protection (Rural Fire Services, 2006)*	**Yes**
	Pleasure Point Bushfire Management Plan	**No**
Tidal inundation	Nil	**No**
Subsidence	Nil	**No**
Acid Sulphate Soils	Liverpool LEP 2008	**No**
	Liverpool DCP 2008	**No**
Potentially Contaminated Land	Liverpool DCP 2008	**No**
	Liverpool Growth Centre Precincts DCP*	**Yes**, see Figure 2-8 of Schedule 1 of the Liverpool Growth Centres Precinct DCP
	Western Sydney Aerotropolis DCP 2020	**No**
Potentially Saline Soils	Liverpool DCP 2008	**No**

Hazard/Risk	Adopted Policy	Does this hazard/risk policy apply to the land?
	Liverpool Growth Centre Precincts DCP*	**Yes**, see Figure 2-4 of Schedule 1 of the Liverpool Growth Centres Precinct DCP
	Western Sydney Aerotropolis DCP 2020	**No**

Note: Land for which a policy applies does not confirm that the land is affected by that hazard/risk. For example, all land for which the Liverpool DCP applies is subject to controls relating to contaminated land, as this policy contains triggers and procedures for identifying potential contamination. Applicants are encouraged to review the relevant policy, and other sections of this certificate, to determine what effect, if any, the policy may have on the land.

7A. Flood related development controls information

(1) Is the land, or part of the land, within the flood planning area and subject to flood-related development controls?

No

For details of these controls, please refer to the flooding section of the relevant DCP(s) as specified in Section 1(c) of this certificate.

(2) Is the land, or part of the land, between the flood planning area and the probable maximum flood and subject to flood related development controls?

No

For details of these controls, please refer to the flooding section of the relevant DCP(s) as specified in Section 1(c) of this certificate.

Note:

Flood planning area has the same meaning as in the Floodplain Development Manual.

Floodplain Development Manual means the Floodplain Development Manual (ISBN 0 7347 5476 0) published by the NSW Government in April 2005.

Probable maximum flood has the same meaning as in the Floodplain Development Manual.

8. Land reserved for acquisition

Does a LEP, draft LEP, SEPP or draft SEPP identify the acquisition of the land, or part of the land, by a public authority, as referred to in section 3.15 of the Act?

Yes

9. Contribution Plans

Liverpool Contributions Plan 2014 - Austral and Leppington North Precincts

9A. Biodiversity certified land*

Is the land, or part of the land, biodiversity certified land (within the meaning of Part 8 of the Biodiversity Conservation Act 2016)?

Yes, part/all of the land is bio-diversity certified land

For information about what biodiversity certification means if your property is "Yes, certified" or "Yes, non-certified", please visit: https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/biodiversity-certification

10. Biodiversity stewardship sites *

Is the land subject to a Biodiversity stewardship sites under Part 5 of the Biodiversity Conservation Act 2016, as notified to Council by the Chief Executive of the Office of Environment and Heritage?

No

10A. Native vegetation clearing set asides*

Is the land a set aside area under section 60ZC of the Local Land Services Act 2013, as notified of the existence of the set aside area by Local Land Services or the public register?

No

11. Bushfire prone land

Is the land or part of the land, bushfire prone land as defined by the EP&A Act 1979?

Yes, part of the land is bushfire prone land

12. Property vegetation plans*

Is Council aware of the land being subject to a Property Vegetation Plan under the Native Vegetation Act 2003?

No, Liverpool is excluded from the operation of the Native Vegetation Act 2003

13. Orders under Trees (Disputes between Neighbours) Act 2006*

Does an order, made under the Trees (Disputes Between Neighbours) Act 2006 in relation to carrying out of work in relation to a tree on the land, apply?

No, Council has not been notified of an order

14. Directions under Part 3A*

Is there a direction (made by the Minister) that a provision of an EPI in relation to a development does not have effect?

No

15. Site compatibility certificates and conditions for seniors housing*

(a) Is there is a current site compatibility certificate (seniors housing), in respect of proposed development on the land?

No, Council has not been notified of an order.

16. Site compatibility certificates for infrastructure, schools or TAFE establishment *

(a) s there is a current site compatibility certificate (infrastructure) or site compatibility certificate (schools or TAFE establishments), in respect of proposed development on the land?

No, Council has not been notified of an order

17. Site compatibility certificates and conditions for affordable rental housing*

Is there is a current site compatibility certificate (Affordable housing), in respect of proposed development on the land?

No, Council has not been notified of an order.

18. Paper subdivision information*

Does any development plan adopted by a relevant authority (or proposed plan subject to a consent ballot) apply to the land? If so the date of the subdivision order that applies to the land.

No

19. Site verification certificates*

Does a current site verification certificate, apply to the land?

No, Council is not aware of a site verification certificate

20. Loose-fill asbestos insulation *

Is a dwelling on the land listed on the register (maintained by the NSW Department of Fair Trading) as containing loose-fill asbestos insulation?

No

Note: despite any listing on the register, any buildings constructed before 1980 may contain loose-fill asbestos insulation or other asbestos products.

21. Affected building notices and building product rectification orders*

Is there any affected building notice (as in Part 4 of the Building Products (Safety) Act 2017) of which the council is aware that is in force in respect of the land?

No

Is there any building product rectification order (as in the Building Products (Safety) Act 2017) of which the council is aware that is in force in respect of the land and has not been fully complied with?

No

Is there any notice of intention to make a building product rectification order (as in the Building Products (Safety) Act 2017) of which the council is aware has been given in respect of the land and is outstanding?

No

22. State Environmental Planning Policy (Western Sydney Aerotropolis) 2020

As per the SEPP (Western Sydney Aerotropolis) 2020, ss the land:

(a) Subject to an ANEF or ANEC contour of 20 or greater?

No

(b1) Affected by the 6km Lighting Intensity Area, or Light Control Zone?

No

(b2) Affected by the Windshear Assessment Trigger Are?

No

(c) Affected by the Obstacle Limitation Surface Are?

Yes

(d) Affected by the Public Safety Area on the Public Safety Area Map?

No

(e1) Within the 3km zone of the Wildlife Buffer Zone Map?

No

(e2) Within the 13km zone of the Wildlife Buffer Zone Map?

Yes

Note: the table above only specifies whether the land is impacted by planning controls related to the Western Sydney Airport. Planning controls also relate to the Bankstown Airport, and are not reflected in this table.

23. Contaminated land

Is the land:

(a) Significantly contaminated land within the meaning of that Act?

No

(b) Subject to a management order within the meaning of that Act?

No

(c) Subject of an approved voluntary management proposal within the meaning of that Act?

No

(d) Subject to an ongoing maintenance order within the meaning of that Act?

No

(e) Subject of a site audit statement within the meaning of that Act? *

No

Note: in this clause 'the Act' refers to the Contaminated Land Management Act 1997.

E Jackson

For further information, please contact
CALL CENTRE – 1300 36 2170

Eddie Jackson

Chief Executive Officer
Liverpool City Council

Appendix D

Borehole Logs

Di1 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.7	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m
0.7-0.9				Stiff	-
0.9-2.5	-	SHALE with clay seam, extremely weathered, very low strength, light-brown	Moist	-	Groundwater not encountered

Di2 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di3 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di4 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di5 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Di6 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.3	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di7 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di8 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.3	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di9 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.3	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di10 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.1m Groundwater not encountered

Di11 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Di12 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di13 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di14 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Di15 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Di16 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.3	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di17 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.2	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Di18 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di19 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.1	-	Topsoil: Silty Clay with rootlets	Moist	-	-
0.1-0.2	CI	Silty Clay, medium plasticity, dark brown	Moist	Firm	Sample collected at 0.15m Groundwater not encountered

Di20 - Log

Depth (m)	Symbol	Material Description	Moisture	Consistency/Density	Field Notes
0.0-0.15	-	Topsoil: Silty Clay with rootlets	Moist	-	Sample collected at 0.15m Groundwater not encountered

Appendix E

Laboratory Documentation

CHAIN OF CUSTODY RECORD

Company	Geotesta
Address	628-32 Foundary Road, Seven Hills
Contact Name	Dr. Mohammad Hossein Bayat
Phone No.	[illegible]
Special Directions	
Purchase Order	
Quote ID No.	[illegible]
Project No.	[illegible]
Project Name	[illegible]
Project Manager	
Email Report	

Client Sample ID	Date	Matrix	[illegible]	[illegible]	[illegible]	TRH	PAH	[illegible]	Asbestos	VOC
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
D6	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
D8	[illegible]	Soil		X	X					
D9	[illegible]	Soil		X	X					
D10	[illegible]	Soil		X	X					
D11	[illegible]	Soil		X	X					
D12	[illegible]	Soil		X	X					
D13	[illegible]	Soil		X	X					
D14	[illegible]	Soil		X	X					
D15	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X	X					
[illegible]	[illegible]	Soil		X						
[illegible]	[illegible]	Soil		X						
[illegible]	[illegible]	Soil		X		X				
TB1	[illegible]	Soil				X				
Total Counts				23	20	2				

Method of Shipment: Courier ( ) Hand Delivered Postal Name Signature Date __/__/__ Time

Laboratory Use Only

Received By		SYD | BNE | MEL | PER | ADL | NEW	Signature		Date	__/__/__	Time		Temperature	18.4
Received By		SYD | BNE | MEL | PER | ADL | NEW	Signature		Date	__/__/__	Time		Report No.	

332883

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Geotesta Pty Ltd (NSW)
Contact name:	- Mohammad Hossein Bazyar
Project name:	495 FOURTH AVENUE AUSTRAL
Project ID:	NE996
Turnaround time:	5 Day
Date/Time received	Oct 15, 2021 6:10 PM
Eurofins reference	832883

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
×	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
×	Split sample sent to requested external lab.
×	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Trip blank, spike and spike lab logged for BTEX analysis, FB1 has wrong matrix in the COC, TRH will be analysed using vials provided.
Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to - Mohammad Hossein Bazyar - mb@geotesta.com.au.

Note: A copy of these results will also be delivered to the general Geotesta Pty Ltd (NSW) email address.

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- Mohammad Hossein Bazyar**

Report **832883-S**
Project name 495 FOURTH AVENUE AUSTRAL
Project ID NE996
Received Date Oct 15, 2021

Client Sample ID			**Di1**	**Di2**	**Di3**	**Di4**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S21-Oc35714**	**S21-Oc35715**	**S21-Oc35716**	**S21-Oc35717**
Date Sampled			**Oct 14, 2021**	**Oct 14, 2021**	**Oct 14, 2021**	**Oct 14, 2021**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.06	0.17	< 0.4	0.14
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	0.06	0.17	< 0.4	0.14
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	0.17	< 0.4	0.14
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	105	110	INT	129
Tetrachloro-m-xylene (surr.)	1	%	125	123	129	133
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			Di1	Di2	Di3	Di4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35714	S21-Oc35715	S21-Oc35716	S21-Oc35717
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	113	120	INT	132
Heavy Metals						
Arsenic	2	mg/kg	17	12	14	8.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	26	26	36	25
Copper	5	mg/kg	42	45	44	46
Lead	5	mg/kg	33	26	30	24
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	11	8.7	11	11
Zinc	5	mg/kg	56	48	63	56
% Moisture	1	%	20	16	18	20

Client Sample ID			Di5	Di6	Di7	Di8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35718	S21-Oc35719	S21-Oc35720	S21-Oc35721
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.12	0.41	0.27	0.25
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	0.12	0.41	0.27	0.25
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	0.12	0.41	0.27	0.25
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	133	134	121	133
Tetrachloro-m-xylene (surr.)	1	%	135	139	132	139
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			Di5	Di6	Di7	Di8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35718	S21-Oc35719	S21-Oc35720	S21-Oc35721
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	137	141	129	137
Heavy Metals						
Arsenic	2	mg/kg	16	13	16	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	28	25	29	28
Copper	5	mg/kg	39	63	43	43
Lead	5	mg/kg	29	27	36	25
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	8.8	8.5	11	11
Zinc	5	mg/kg	54	48	80	56
% Moisture	1	%	31	19	18	21

Client Sample ID			Di9	Di10	Di11	Di12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35722	S21-Oc35723	S21-Oc35724	S21-Oc35725
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	0.15	0.24	0.27
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			Di9	Di10	Di11	Di12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35722	S21-Oc35723	S21-Oc35724	S21-Oc35725
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	0.15	0.24	0.27
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	0.15	0.24	0.27
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	124	120	121	114
Tetrachloro-m-xylene (surr.)	1	%	142	131	134	125
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	142	128	128	117

Client Sample ID			Di9	Di10	Di11	Di12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35722	S21-Oc35723	S21-Oc35724	S21-Oc35725
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	12	13	11	7.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	26	25	27	44
Copper	5	mg/kg	33	55	38	43
Lead	5	mg/kg	21	25	23	20
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	10	9.7	9.9	27
Zinc	5	mg/kg	52	75	52	75
% Moisture	1	%	19	21	21	23

Client Sample ID			Di13	Di14	Di15	Di16
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35726	S21-Oc35727	S21-Oc35728	S21-Oc35729
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	0.06	0.05	0.35	0.24
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	0.06	0.05	0.35	0.24
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	0.35	0.24
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	123	135	104	111
Tetrachloro-m-xylene (surr.)	1	%	124	148	104	124

Client Sample ID			Di13	Di14	Di15	Di16
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35726	S21-Oc35727	S21-Oc35728	S21-Oc35729
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	119	141	101	119
Heavy Metals						
Arsenic	2	mg/kg	15	12	24	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	26	26	24	33
Copper	5	mg/kg	42	52	54	41
Lead	5	mg/kg	26	29	45	36
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	10	10	14	11
Zinc	5	mg/kg	61	97	140	84
% Moisture	1	%	21	22	19	15

Client Sample ID			Di17	Di18	Di19	Di20
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35730	S21-Oc35731	S21-Oc35732	S21-Oc35733
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.1	0.42	0.09	0.13
4.4'-DDT	0.05	mg/kg	< 0.05	0.06	< 0.05	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.1	0.48	0.09	0.13
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	0.48	< 0.1	0.13
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	149	119	129	116
Tetrachloro-m-xylene (surr.)	1	%	INT	116	126	117
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			Di17	Di18	Di19	Di20
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35730	S21-Oc35731	S21-Oc35732	S21-Oc35733
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	INT	116	126	119
Heavy Metals						
Arsenic	2	mg/kg	16	20	7.9	8.5
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	27	25	18	19
Copper	5	mg/kg	45	47	61	100
Lead	5	mg/kg	23	53	28	23
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	13	13	10	11
Zinc	5	mg/kg	59	170	110	95
% Moisture	1	%	17	19	20	18

Client Sample ID			D1	D2	TB1	TS1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35734	S21-Oc35735	S21-Oc35737	S21-Oc35741
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	17	8.4	-	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	-
Chromium	5	mg/kg	26	22	-	-
Copper	5	mg/kg	44	64	-	-
Lead	5	mg/kg	32	23	-	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	-
Nickel	5	mg/kg	11	10	-	-
Zinc	5	mg/kg	62	99	-	-
% Moisture	1	%	20	22	-	-
BTEX						
Benzene	0.1	mg/kg	-	-	< 0.1	-
Toluene	0.1	mg/kg	-	-	< 0.1	-
Ethylbenzene	0.1	mg/kg	-	-	< 0.1	-
m&p-Xylenes	0.2	mg/kg	-	-	< 0.2	-
o-Xylene	0.1	mg/kg	-	-	< 0.1	-

Client Sample ID			D1	D2	TB1	TS1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-Oc35734	S21-Oc35735	S21-Oc35737	S21-Oc35741
Date Sampled			Oct 14, 2021	Oct 14, 2021	Oct 14, 2021	Oct 14, 2021
Test/Reference	LOR	Unit				
BTEX						
Xylenes - Total*	0.3	mg/kg	-	-	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	-	-	86	-
BTEX						
Benzene	1	%	-	-	-	87
Ethylbenzene	1	%	-	-	-	81
m&p-Xylenes	1	%	-	-	-	80
o-Xylene	1	%	-	-	-	81
Toluene	1	%	-	-	-	85
Xylenes - Total	1	%	-	-	-	81
4-Bromofluorobenzene (surr.)	1	%	-	-	-	82

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Organochlorine Pesticides	Sydney	Oct 21, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Oct 21, 2021	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Metals M8	Sydney	Oct 21, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
BTEX	Sydney	Oct 21, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
% Moisture	Sydney	Oct 18, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 495 FOURTH AVENUE AUSTRAL
Project ID: NE996

Order No.:
Report #: 832883
Phone: 1300852 216
Fax:

Received: Oct 15, 2021 6:10 PM
Due: Oct 25, 2021
Priority: 5 Day
Contact Name: - Mohammad Hossein Bazyar

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Metals M8	BTEX	Suite B14: OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	Di1	Oct 14, 2021		Soil	S21-Oc35714	X		X	X		
2	Di2	Oct 14, 2021		Soil	S21-Oc35715	X		X	X		
3	Di3	Oct 14, 2021		Soil	S21-Oc35716	X		X	X		
4	Di4	Oct 14, 2021		Soil	S21-Oc35717	X		X	X		
5	Di5	Oct 14, 2021		Soil	S21-Oc35718	X		X	X		
6	Di6	Oct 14, 2021		Soil	S21-Oc35719	X		X	X		
7	Di7	Oct 14, 2021		Soil	S21-Oc35720	X		X	X		
8	Di8	Oct 14, 2021		Soil	S21-Oc35721	X		X	X		
9	Di9	Oct 14, 2021		Soil	S21-Oc35722	X		X	X		

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Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
10	Di10	Oct 14, 2021		Soil	S21-Oc35723	X		X	X		
11	Di11	Oct 14, 2021		Soil	S21-Oc35724	X		X	X		
12	Di12	Oct 14, 2021		Soil	S21-Oc35725	X		X	X		
13	Di13	Oct 14, 2021		Soil	S21-Oc35726	X		X	X		
14	Di14	Oct 14, 2021		Soil	S21-Oc35727	X		X	X		
15	Di15	Oct 14, 2021		Soil	S21-Oc35728	X		X	X		
16	Di16	Oct 14, 2021		Soil	S21-Oc35729	X		X	X		
17	Di17	Oct 14, 2021		Soil	S21-Oc35730	X		X	X		
18	Di18	Oct 14, 2021		Soil	S21-Oc35731	X		X	X		
19	Di19	Oct 14, 2021		Soil	S21-Oc35732	X		X	X		
20	Di20	Oct 14, 2021		Soil	S21-Oc35733	X		X	X		

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Sample Detail						Metals M8	BTEX	Suite B14: OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
21	D1	Oct 14, 2021		Soil	S21-Oc35734	X			X		
22	D2	Oct 14, 2021		Soil	S21-Oc35735	X			X		
23	FB1	Oct 14, 2021		Water	S21-Oc35736	X				X	
24	TB1	Oct 14, 2021		Soil	S21-Oc35737		X				
25	TS1	Oct 14, 2021		Soil	S21-Oc35741						X
Test Counts						23	1	20	22	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs..

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM where no positive PFAS results have been reported have been reviewed and no data was affected.

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QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	106			70-130	Pass	
4.4'-DDD	%	109			70-130	Pass	
4.4'-DDE	%	116			70-130	Pass	
4.4'-DDT	%	93			70-130	Pass	
a-HCH	%	105			70-130	Pass	
Aldrin	%	119			70-130	Pass	
b-HCH	%	101			70-130	Pass	
d-HCH	%	106			70-130	Pass	
Dieldrin	%	107			70-130	Pass	
Endosulfan I	%	109			70-130	Pass	
Endosulfan II	%	107			70-130	Pass	
Endosulfan sulphate	%	107			70-130	Pass	
Endrin	%	113			70-130	Pass	
Endrin aldehyde	%	116			70-130	Pass	
Endrin ketone	%	101			70-130	Pass	
g-HCH (Lindane)	%	112			70-130	Pass	
Heptachlor	%	106			70-130	Pass	
Heptachlor epoxide	%	110			70-130	Pass	
Hexachlorobenzene	%	109			70-130	Pass	
Methoxychlor	%	96			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	120			70-130	Pass	
Dimethoate	%	77			70-130	Pass	
Ethion	%	110			70-130	Pass	
Fenitrothion	%	103			70-130	Pass	
Methyl parathion	%	110			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mevinphos	%	90			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	80			80-120	Pass	
Cadmium	%	87			80-120	Pass	
Chromium	%	111			80-120	Pass	
Copper	%	92			80-120	Pass	
Lead	%	111			80-120	Pass	
Mercury	%	99			80-120	Pass	
Nickel	%	94			80-120	Pass	
Zinc	%	110			80-120	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	88			70-130	Pass	
Toluene	%	89			70-130	Pass	
Ethylbenzene	%	90			70-130	Pass	
m&p-Xylenes	%	91			70-130	Pass	
o-Xylene	%	92			70-130	Pass	
Xylenes - Total*	%	91			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Copper	S21-Oc31932	NCP	%	85			75-125	Pass	
Zinc	S21-Oc31932	NCP	%	99			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S21-Oc35720	CP	%	92			75-125	Pass	
Cadmium	S21-Oc35720	CP	%	77			75-125	Pass	
Chromium	S21-Oc35720	CP	%	91			75-125	Pass	
Lead	S21-Oc35720	CP	%	92			75-125	Pass	
Mercury	S21-Oc35720	CP	%	85			75-125	Pass	
Nickel	S21-Oc35720	CP	%	79			75-125	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S21-Oc35722	CP	%	118			70-130	Pass	
4.4'-DDD	S21-Oc35722	CP	%	124			70-130	Pass	
4.4'-DDE	S21-Oc35722	CP	%	118			70-130	Pass	
4.4'-DDT	S21-Oc35722	CP	%	95			70-130	Pass	
a-HCH	S21-Oc35722	CP	%	117			70-130	Pass	
Aldrin	S21-Oc35722	CP	%	115			70-130	Pass	
b-HCH	S21-Oc35722	CP	%	120			70-130	Pass	
d-HCH	S21-Oc35722	CP	%	115			70-130	Pass	
Dieldrin	S21-Oc35722	CP	%	118			70-130	Pass	
Endosulfan I	S21-Oc35722	CP	%	120			70-130	Pass	
Endosulfan II	S21-Oc35722	CP	%	113			70-130	Pass	
Endosulfan sulphate	S21-Oc35722	CP	%	111			70-130	Pass	
Endrin	S21-Oc35722	CP	%	93			70-130	Pass	
Endrin aldehyde	S21-Oc35722	CP	%	106			70-130	Pass	
Endrin ketone	S21-Oc35722	CP	%	120			70-130	Pass	
g-HCH (Lindane)	S21-Oc35722	CP	%	120			70-130	Pass	
Heptachlor	S21-Oc35722	CP	%	114			70-130	Pass	
Heptachlor epoxide	S21-Oc35722	CP	%	113			70-130	Pass	
Hexachlorobenzene	S21-Oc35722	CP	%	122			70-130	Pass	
Methoxychlor	S21-Oc35722	CP	%	95			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S21-Oc35722	CP	%	124			70-130	Pass	
Dimethoate	S21-Oc35722	CP	%	101			70-130	Pass	
Ethion	S21-Oc35722	CP	%	110			70-130	Pass	
Fenitrothion	S21-Oc35722	CP	%	111			70-130	Pass	
Methyl parathion	S21-Oc35722	CP	%	113			70-130	Pass	
Mevinphos	S21-Oc35722	CP	%	112			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S21-Oc45639	NCP	%	73			70-130	Pass	
Toluene	S21-Oc45639	NCP	%	77			70-130	Pass	
Ethylbenzene	S21-Oc45639	NCP	%	79			70-130	Pass	
m&p-Xylenes	S21-Oc45639	NCP	%	80			70-130	Pass	
o-Xylene	S21-Oc45639	NCP	%	81			70-130	Pass	
Xylenes - Total*	S21-Oc45639	NCP	%	80			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Oc35714	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-Oc35714	CP	mg/kg	0.06	0.06	4.0	30%	Pass	
4.4'-DDT	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-Oc35714	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-Oc35714	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Ethion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S21-Oc35714	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-Oc35714	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-Oc35714	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S21-Oc32283	NCP	%	21	22	8.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Oc35719	CP	mg/kg	13	16	23	30%	Pass	
Cadmium	S21-Oc35719	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-Oc35719	CP	mg/kg	25	29	17	30%	Pass	
Copper	S21-Oc35719	CP	mg/kg	63	74	16	30%	Pass	
Lead	S21-Oc35719	CP	mg/kg	27	33	21	30%	Pass	
Mercury	S21-Oc35719	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-Oc35719	CP	mg/kg	8.5	10	17	30%	Pass	
Zinc	S21-Oc35719	CP	mg/kg	48	56	16	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Oc35721	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-Oc35721	CP	mg/kg	0.25	0.35	35	30%	Fail	Q15
4.4'-DDT	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Hexachlorobenzene	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-Oc35721	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-Oc35721	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S21-Oc35721	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-Oc35721	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-Oc35721	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Oc35729	CP	mg/kg	11	8.1	30	30%	Pass	
Cadmium	S21-Oc35729	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-Oc35729	CP	mg/kg	33	27	22	30%	Pass	
Copper	S21-Oc35729	CP	mg/kg	41	40	1.0	30%	Pass	
Lead	S21-Oc35729	CP	mg/kg	36	34	6.0	30%	Pass	
Mercury	S21-Oc35729	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-Oc35729	CP	mg/kg	11	11	5.0	30%	Pass	
Zinc	S21-Oc35729	CP	mg/kg	84	80	5.0	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Oc35731	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-Oc35731	CP	mg/kg	0.42	0.30	33	30%	Fail	Q15
4.4'-DDT	S21-Oc35731	CP	mg/kg	0.06	< 0.05	23	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
a-HCH	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-Oc35731	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S21-Oc35731	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-Oc35731	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S21-Oc35731	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-Oc35731	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-Oc35731	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S21-Oc45638	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S21-Oc45638	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S21-Oc45638	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S21-Oc45638	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S21-Oc45638	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S21-Oc45638	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Asim Khan	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **- Mohammad Hossein Bazyar**

Report **832883-W**
Project name 495 FOURTH AVENUE AUSTRAL
Project ID NE996
Received Date Oct 15, 2021

Client Sample ID			**FB1**
Sample Matrix			**Water**
Eurofins Sample No.			**S21-Oc35736**
Date Sampled			**Oct 14, 2021**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
Heavy Metals			
Arsenic	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Oct 22, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 22, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Oct 22, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8	Sydney	Oct 22, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 495 FOURTH AVENUE AUSTRAL
Project ID: NE996

Order No.:
Report #: 832883
Phone: 1300852 216
Fax:

Received: Oct 15, 2021 6:10 PM
Due: Oct 25, 2021
Priority: 5 Day
Contact Name: - Mohammad Hossein Bazyar

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Metals M8	BTEX	Suite B14: OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	Di1	Oct 14, 2021		Soil	S21-Oc35714	X		X	X		
2	Di2	Oct 14, 2021		Soil	S21-Oc35715	X		X	X		
3	Di3	Oct 14, 2021		Soil	S21-Oc35716	X		X	X		
4	Di4	Oct 14, 2021		Soil	S21-Oc35717	X		X	X		
5	Di5	Oct 14, 2021		Soil	S21-Oc35718	X		X	X		
6	Di6	Oct 14, 2021		Soil	S21-Oc35719	X		X	X		
7	Di7	Oct 14, 2021		Soil	S21-Oc35720	X		X	X		
8	Di8	Oct 14, 2021		Soil	S21-Oc35721	X		X	X		
9	Di9	Oct 14, 2021		Soil	S21-Oc35722	X		X	X		

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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ABN: 50 005 085 521

Melbourne
6 Monterey Road
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Phone : +61 3 8564 5000
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Address: Unit 6, 20/22 Foundry Road
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Project Name: 495 FOURTH AVENUE AUSTRAL
Project ID: NE996

Order No.:
Report #: 832883
Phone: 1300852 216
Fax:

Received: Oct 15, 2021 6:10 PM
Due: Oct 25, 2021
Priority: 5 Day
Contact Name: - Mohammad Hossein Bazyar

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Metals M8	BTEX	Suite B14: OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
10	Di10	Oct 14, 2021		Soil	S21-Oc35723	X		X	X		
11	Di11	Oct 14, 2021		Soil	S21-Oc35724	X		X	X		
12	Di12	Oct 14, 2021		Soil	S21-Oc35725	X		X	X		
13	Di13	Oct 14, 2021		Soil	S21-Oc35726	X		X	X		
14	Di14	Oct 14, 2021		Soil	S21-Oc35727	X		X	X		
15	Di15	Oct 14, 2021		Soil	S21-Oc35728	X		X	X		
16	Di16	Oct 14, 2021		Soil	S21-Oc35729	X		X	X		
17	Di17	Oct 14, 2021		Soil	S21-Oc35730	X		X	X		
18	Di18	Oct 14, 2021		Soil	S21-Oc35731	X		X	X		
19	Di19	Oct 14, 2021		Soil	S21-Oc35732	X		X	X		
20	Di20	Oct 14, 2021		Soil	S21-Oc35733	X		X	X		

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web: www.eurofins.com.au
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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
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35 O'Rorke Road
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Phone : +64 9 526 45 51
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Project Name: 495 FOURTH AVENUE AUSTRAL
Project ID: NE996

Order No.:
Report #: 832883
Phone: 1300852 216
Fax:

Received: Oct 15, 2021 6:10 PM
Due: Oct 25, 2021
Priority: 5 Day
Contact Name: - Mohammad Hossein Bazyar

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Metals M8	BTEX	Suite B14: OCP/OPP	Moisture Set	Total Recoverable Hydrocarbons	BTEX
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
21	D1	Oct 14, 2021		Soil	S21-Oc35734	X			X		
22	D2	Oct 14, 2021		Soil	S21-Oc35735	X			X		
23	FB1	Oct 14, 2021		Water	S21-Oc35736	X				X	
24	TB1	Oct 14, 2021		Soil	S21-Oc35737		X				
25	TS1	Oct 14, 2021		Soil	S21-Oc35741						X
Test Counts						23	1	20	22	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs..

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	98			70-130	Pass	
TRH C10-C14	%	96			70-130	Pass	
Naphthalene	%	100			70-130	Pass	
TRH C6-C10	%	99			70-130	Pass	
TRH >C10-C16	%	93			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	106			80-120	Pass	
Cadmium	%	90			80-120	Pass	
Chromium	%	108			80-120	Pass	
Copper	%	104			80-120	Pass	
Lead	%	107			80-120	Pass	
Mercury	%	111			80-120	Pass	
Nickel	%	105			80-120	Pass	
Zinc	%	99			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S21-Oc26696	NCP	%	85			70-130	Pass	
TRH C10-C14	S21-Oc42247	NCP	%	121			70-130	Pass	
Naphthalene	S21-Oc26696	NCP	%	87			70-130	Pass	
TRH C6-C10	S21-Oc26696	NCP	%	84			70-130	Pass	
TRH >C10-C16	S21-Oc42247	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S21-Oc28505	NCP	%	107			75-125	Pass	
Cadmium	S21-Oc42253	NCP	%	100			75-125	Pass	
Chromium	S21-Oc42253	NCP	%	95			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper	S21-Oc42253	NCP	%	83			75-125	Pass	
Lead	S21-Oc42253	NCP	%	89			75-125	Pass	
Mercury	S21-Oc42253	NCP	%	101			75-125	Pass	
Nickel	S21-Oc42253	NCP	%	87			75-125	Pass	
Zinc	S21-Oc42253	NCP	%	85			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S21-Oc37228	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S21-Oc42253	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S21-Oc42253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S21-Oc42253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Naphthalene	S21-Oc37228	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S21-Oc37228	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S21-Oc42253	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S21-Oc42253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S21-Oc42253	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Oc37252	NCP	mg/L	0.003	0.003	2.0	30%	Pass	
Cadmium	S21-Oc37252	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S21-Oc37252	NCP	mg/L	0.007	0.007	2.0	30%	Pass	
Copper	S21-Oc37252	NCP	mg/L	0.012	0.012	4.0	30%	Pass	
Lead	S21-Oc37252	NCP	mg/L	0.009	0.010	2.0	30%	Pass	
Mercury	S21-Oc37252	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S21-Oc37252	NCP	mg/L	0.006	0.007	2.0	30%	Pass	
Zinc	S21-Oc37252	NCP	mg/L	0.035	0.034	2.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised by:

Asim Khan	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

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☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: EnviroSampleNSW@eurofins.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murarrie
Phone: +617 3902 4600
Email: EnviroSampleQLD@eurofins.com.au

☐ **Melbourne**
2 Kingsland Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +61 3 8564 5090
Email: EnviroSampleVic@eurofins.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name :	Geotesta	Contact Name:	Victor Kirpichnikov / Dr. Mohammad Bazyar	Purchase Order :	NE896	COC Number :
Office Address :	Unit 06, 20-22 Foundry Road,	Project Manager :	Victor Kirpichnikov / Dr. Mohammad Bazyar	PROJECT Number :	NE896	Eurofins | mgt quote ID :
Seven Hills 2147		Email for results :	vk@geotesta.com.au, mb@geotesta.com.au	PROJECT Name :	495 Fourth Avenue, Austral NSW 2179	Data output format:
Phone: 452454418						

Special Directions & Comments :

Eurofins | mgt Dl water batch number:

Analytes

	Sample ID	Date	Matrix	B7A & B15	Asbestos ID in soil - NEPM & WA Guidelines 0.001% w/w	Heavy Metal MB	pH	CEC	% Clay	BTEX and Volatile TRHs	MB
1	EIL 1	24/02/2022	Soil								X
2	EIL 2	24/02/2022	Soil				X	X	X		X
3	TripSpike / Trip Blank	24/02/2022	QAQC							X	
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
SOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous Iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	125P	60ml plastic	40ml vial	200ml glass	Jar	plastic bag	Sample comments
						X		
						X		
				XX				2 x QAQC vials

Relinquished By:	Victor Kirpichnikov
Date & Time:	24/02/22
Signature:	

Laboratory Staff

Received By:	MR
Date & Time:	25/2/22 6:49PM
Signature:	

Turn around time

1 DAY ☑ 2 DAY ☐ 3 DAY ☐
5 DAY ☐ 10 DAY ☐

Method Of Shipment

☑ Courier
☐ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 22.7°C

Report number: 866757 866760

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www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Geotesta Pty Ltd (NSW)
Contact name:	Victor Kirpichnikov (GEOTESTA)
Project name:	495 FOURTH AVENUE - AUSTRAL NSW 2179
Project ID:	NE996
Turnaround time:	1 Day
Date/Time received	Feb 25, 2022 6:49 PM
Eurofins reference	866757

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
×	Split sample sent to requested external lab.
×	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

CEC and %Clay unavailable on 1-day TAT (2-day TAT minimum) and samples received after departure of interstate transit, logged as a 3-day TAT under 866760.
Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Asim Khan on phone : or by email: AsimKhan@eurofins.com

Results will be delivered electronically via email to Victor Kirpichnikov (GEOTESTA) - vk@geotesta.com.au.

Note: A copy of these results will also be delivered to the general Geotesta Pty Ltd (NSW) email address.

Geotesta Pty Ltd (NSW)
Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Victor Kirpichnikov (GEOTESTA)**

Report **866757-S-V2**
Project name 495 FOURTH AVENUE - AUSTRAL NSW 2179
Project ID NE996
Received Date Feb 25, 2022

Client Sample ID			**EIL 1**	**EIL 2**	**TS**	**TB**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S22-Fe54782**	**S22-Fe54783**	**S22-Fe54784**	**S22-Fe54786**
Date Sampled			**Feb 24, 2022**	**Feb 24, 2022**	**Feb 24, 2022**	**Feb 24, 2022**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	9.2	12	-	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	-
Chromium	5	mg/kg	17	19	-	-
Copper	5	mg/kg	22	20	-	-
Lead	5	mg/kg	24	27	-	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	-
Nickel	5	mg/kg	7.8	14	-	-
Zinc	5	mg/kg	95	78	-	-
% Moisture	1	%	26	25	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	6.6	-	-
TRH C6-C10	1	%	-	-	100	-
Total Recoverable Hydrocarbons						
Naphthalene	1	%	-	-	95	-
TRH C6-C9	1	%	-	-	100	-
BTEX						
Benzene	1	%	-	-	110	-
Ethylbenzene	1	%	-	-	100	-
m&p-Xylenes	1	%	-	-	100	-
o-Xylene	1	%	-	-	100	-
Toluene	1	%	-	-	100	-
Xylenes - Total	1	%	-	-	100	-
4-Bromofluorobenzene (surr.)	1	%	-	-	111	-
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	-	-	< 20
Naphthalene[N02]	0.5	mg/kg	-	-	-	< 0.5
TRH C6-C10	20	mg/kg	-	-	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	-	< 20
BTEX						
Benzene	0.1	mg/kg	-	-	-	< 0.1
Toluene	0.1	mg/kg	-	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
o-Xylene	0.1	mg/kg	-	-	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	-	118

Client Sample ID			EIL 2
Sample Matrix			**Soil**
Eurofins Sample No.			**S22-Fe54787**
Date Sampled			**Feb 24, 2022**
Test/Reference	LOR	Unit	
% Moisture	1	%	25
% Clay	1	%	13
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	33
Cation Exchange Capacity			
Cation Exchange Capacity	0.05	meq/100g	8.7

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Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Metals M8	Sydney	Feb 25, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
pH (1:5 Aqueous extract at 25°C as rec.)	Sydney	Feb 25, 2022	7 Days
- Method: LTM-GEN-7090 pH by ISE			
% Clay	Brisbane	Mar 02, 2022	14 Days
- Method: LTM-GEN-7040			
% Moisture	Sydney	Feb 25, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Sydney	Feb 28, 2022	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Mar 02, 2022	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Feb 25, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Feb 25, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Feb 25, 2022	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Geotesta Pty Ltd (NSW)
Address: Unit 6, 20/22 Foundry Road
Seven Hills
NSW 2147

Project Name: 495 FOURTH AVENUE - AUSTRAL NSW 2179
Project ID: NE996

Order No.: NE996
Report #: 866757
Phone: 1300852 216
Fax:

Received: Feb 25, 2022 6:49 PM
Due: Feb 28, 2022
Priority: 1 Day
Contact Name: Victor Kirpichnikov (GEOTESTA)

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						% Clay	pH (1:5 Aqueous extract at 25°C as rec.)	Metals M8	Moisture Set	Cation Exchange Capacity	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X	X		
Sydney Laboratory - NATA # 1261 Site # 18217							X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794						X						
Mayfield Laboratory - NATA # 1261 Site # 25079												
Perth Laboratory - NATA # 2377 Site # 2370												
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	EIL 1	Feb 24, 2022		Soil	S22-Fe54782			X	X			
2	EIL 2	Feb 24, 2022		Soil	S22-Fe54783		X	X	X			
3	TS	Feb 24, 2022		Soil	S22-Fe54784							X
4	TB	Feb 24, 2022		Soil	S22-Fe54786						X	
5	EIL 2	Feb 24, 2022		Soil	S22-Fe54787	X			X	X		
Test Counts						1	1	2	3	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
µg/L: micrograms per litre
ppm: parts per million
ppb: parts per billion
%: Percentage
org/100 mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100 mL: Most Probable Number of organisms per 100 millilitres

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	94			80-120	Pass	
Cadmium	%	101			80-120	Pass	
Chromium	%	93			80-120	Pass	
Copper	%	92			80-120	Pass	
Lead	%	96			80-120	Pass	
Mercury	%	98			80-120	Pass	
Nickel	%	92			80-120	Pass	
Zinc	%	94			80-120	Pass	
LCS - % Recovery							
% Clay	%	95			70-130	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)	%	87			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	71			70-130	Pass	
Naphthalene	%	78			70-130	Pass	
TRH C6-C10	%	71			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	89			70-130	Pass	
Toluene	%	82			70-130	Pass	
Ethylbenzene	%	85			70-130	Pass	
m&p-Xylenes	%	84			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
o-Xylene			%	86			70-130	Pass	
Xylenes - Total*			%	84			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S22-Fe52829	NCP	%	87			75-125	Pass	
Cadmium	S22-Fe53438	NCP	%	104			75-125	Pass	
Chromium	S22-Fe52829	NCP	%	90			75-125	Pass	
Copper	S22-Fe52829	NCP	%	92			75-125	Pass	
Lead	S22-Fe53438	NCP	%	108			75-125	Pass	
Mercury	S22-Fe53438	NCP	%	110			75-125	Pass	
Nickel	S22-Fe52829	NCP	%	90			75-125	Pass	
Zinc	S22-Fe52829	NCP	%	89			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S22-Fe53437	NCP	mg/kg	11	10	9.0	30%	Pass	
Cadmium	S22-Fe53440	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-Fe53437	NCP	mg/kg	27	28	2.0	30%	Pass	
Copper	S22-Fe53437	NCP	mg/kg	12	12	<1	30%	Pass	
Lead	S22-Fe53440	NCP	mg/kg	19	18	9.0	30%	Pass	
Mercury	S22-Fe53440	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-Fe53437	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S22-Fe53437	NCP	mg/kg	8.1	7.0	14	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Fe54783	CP	%	25	27	6.0	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	S22-Fe54783	CP	pH Units	6.6	6.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S22-Fe46527	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Naphthalene	S22-Fe46527	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S22-Fe46527	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Fe46527	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S22-Fe46527	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S22-Fe46527	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S22-Fe46527	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S22-Fe46527	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S22-Fe46527	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Fe54787	CP	%	25	26	3.0	30%	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)	S22-Fe54787	CP	uS/cm	33	35	4.7	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Cation Exchange Capacity	M22-Fe45795	NCP	meq/100g	19	18	1.0	30%	Pass	

Comments

V2 - New version created to include Clay and CEC results for sample EIL 2 from report 866760

Eurofins | Environment Testing accreditation number 1261, site 18217 is currently in progress of a controlled transition to a new custom built location at 179 Magowar Road, Girraween, NSW 2145. All results on this report denoted as being performed by Eurofins | Environment Testing Unit F3, Building F, 16 Mars road, Lane Cove West, NSW 2066, corporate site 18217, will have been performed on either Lane Cove or new Girraween site

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised by:

Emma Beesley	Analytical Services Manager
Charl Du Preez	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
John Nguyen	Senior Analyst-Metal (NSW)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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